

# ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN 15804+A2



**Carl Stahl ARC GmbH**

**X-TEND® CXL - MW70 - 400/1.5mm - stainless-steel cable mesh**



X-TEND® CXL micro  
Cable-Ø 1.5 mm  
Mesh width 70-400 mm

**Carl Stahl**  
ARCHITEKTUR

**Owner of the declaration**

Carl Stahl ARC GmbH  
Siemensstrasse 2  
73079 Suessen  
Germany

**Product**

X-TEND® CXL - MW70 - 400/1.5mm -  
stainless-steel cable mesh

**Declared product / Declared unit**

1 kg

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

EN 15804:2012 + A2:2019,  
NPCR 013 Part B for Steel and Aluminium  
Construction Products,  
NPCR Part A:2021

**Program operator:**

EPD Global  
Majorstuen P.O. Box 5250  
N-0303 Oslo  
Norway

**Declaration number**

NEPD-10418-10418-2

**Registration number**

NEPD-10418-10418-2

**Issue date**

13.10.2025

**Valid to**

12.10.2030

**EPD Software**

Emidat EPD Tool v1.0.0

## General Information

### Product

X-TEND® CXL - MW70 - 400/1.5mm - stainless-steel cable mesh

### Program Operator

EPD Global  
Majorstuen P.O. Box 5250  
N-0303 Oslo  
Norway  
Phone: +47 23 08 80 00  
Email: post@epd-norge.no

### Declaration Number

NEPD-10418-10418-2

### This declaration is based on Product Category Rules

EN 15804:2012 + A2:2019,  
NPCR 013 Part B for Steel and Aluminium Construction Products,  
NPCR Part A:2021

### Statements

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

### Declared unit

1 kg

### General information on verification of EPD from EPD tools

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD Global's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD Global, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD Global's General Programme Instructions for further information on EPD tools.

### Verification of EPD tool

Charlotte Merlin, FORCE Technology  
(no signature required)

### Owner of the declaration

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### Manufacturer

Carl Stahl ARC GmbH  
Siemensstrasse 2  
73079 Suessen, Germany

### Place of production

Süßen, Germany

### Management system

-

### Issue date

13.10.2025

### Valid to

12.10.2030

### Year of study

2024

### Comparability

EPDs of construction products may not be comparable if they do not comply with EN 15804 and are not seen in a building context. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database (including primary and secondary data).

### Development and verification of EPD

The declaration was created using the Emidat EPD tool v1.0, developed by Emidat GmbH. The EPD tool has been approved by EPD Global.

Developer of EPD: Marc Schmidtke

Reviewer of company-specific input data and EPD:  
Christian Hummel

### Approved

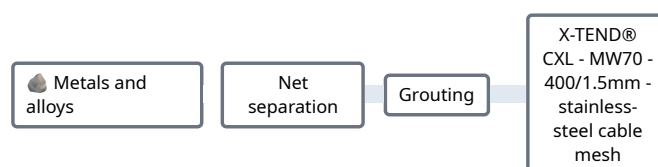


Håkon Hauan, The Norwegian EPD Foundation

## Product

### Product description

X-TEND® is a flexible, robust mesh made of stainless-steel cables connected via net clamps. It offers high tensile strength, weather resistance and a long service life. Thanks to its flexibility, the cable mesh adapts to a wide variety of shapes and structures without losing stability. It can be bent or tensioned both flat and spatially. X-TEND® impresses with its elegant, almost invisible appearance, which combines lightness with safety. At the same time, the open structure allows a high level of light and air permeability. This EPD refers to X-TEND® CXL micro 1.5 with a mesh size range of 70 - 400 mm.



X-TEND® is used particularly in the architectural sector as a railing infill, fall protection, façade element, window safety, ball net or greening aid. It is also used in zoological facilities for animal enclosures, as it provides a safe yet transparent barrier. It offers a modern solution for a wide range of applications where design, safety and durability are required. Stainless-steel wire mesh combines functionality with contemporary design.

### Product specification

| Name of ingredient | Share of total weight | Country of origin |
|--------------------|-----------------------|-------------------|
| Metals and alloys  | 80 - 100 %            | Various           |

### Technical data

|            | Unit                | Value  |
|------------|---------------------|--------|
| Density    | kg / m <sup>3</sup> | 8030.0 |
| Total mass | kg                  | 1.0    |

### Market

Germany

## LCA: Calculation rules

### Declared unit

1 kg

### Reference service life

Not defined

### Data quality

The foreground data are based on extensive and detailed data collection at the production site of the manufacturer, covering key processes such as raw material sourcing, formulation, and manufacturing. These foreground data are fully linked with corresponding datasets from the background database (ecoinvent 3.10) or with EN15804+A2-compliant EPDs, ensuring consistency, reliability, and maintaining alignment with the latest industry standards.

The overall data representativeness is rated as good with an overall score of 4.21/5, in accordance with EN 15804+A2 Annex E guidance on data quality assessment, considering geographical, technical, and temporal representativeness.

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

|                  | Production          |           |               | Installation |                      | Use stage |             |        |             |               |                        |                       | End-of-Life |           |                  |          | Next product system                           |
|------------------|---------------------|-----------|---------------|--------------|----------------------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|-------------|-----------|------------------|----------|-----------------------------------------------|
|                  | Raw material supply | Transport | Manufacturing | Transport    | Installation Process | Use       | Maintenance | Repair | Replacement | Refurbishment | Operational Energy Use | Operational Water Use | Demolition  | Transport | Waste Processing | Disposal | Benefits and loads beyond the system boundary |
| Module           | A1                  | A2        | A3            | A4           | A5                   | B1        | B2          | B3     | B4          | B5            | B6                     | B7                    | C1          | C2        | C3               | C4       | D                                             |
| Modules declared | x                   | x         | x             | x            | MND                  | MND       | MND         | MND    | MND         | MND           | MND                    | MND                   | x           | x         | x                | x        | x                                             |
| Geography        |                     |           | DE            | DE           | MND                  | MND       | MND         | MND    | MND         | MND           | MND                    | MND                   | DE          | DE        | DE               | DE       | DE                                            |

For the geographies modeled in A1 and A2, refer to *Product specification*.

Type of EPD: Cradle to gate with options A4, C1, C2, C3, C4 and D

#### Stage of Material Production and Construction

Module A1: Extraction and processing of raw materials

Module A2: Transportation of raw materials to the plant

Module A3: Steel component production at the plant and waste treatment

Module A4: Transportation to the construction site

#### Disposal Stage

Module C1: Demolition/Dismantling

Module C2: Transportation of steel demolition waste for processing

Module C3: Sorting of waste components and recycling of steel

Module C4: Disposal of steel to landfill

#### Credits and burdens outside the system boundaries

Module D: Credits and burdens from the use of recycled steel as a replacement for primary steel

### Cut-off criteria

No cut-offs were applied.

**Allocation**

Foreground inventory data (energy and fuels, ancillary materials, emissions and waste) was collected at the production-process level. Using the total output of the production process in 2024, these flows are allocated to one declared unit based on mass.

## LCA: Scenarios and additional technical information

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

| Transport to the building site (A4) | Value                                           | Unit      |
|-------------------------------------|-------------------------------------------------|-----------|
| Transported mass                    | 1.00                                            | kg        |
| Truck: Distance                     | 300.00                                          | km        |
| Truck: Energy demand                | 1.58                                            | MJ / t*km |
| Truck: Activity                     | transport, freight, lorry >32 metric ton, EURO6 | -         |
| Truck: Capacity utilization         | 53.30                                           | %         |

| Demolition (C1)                | Value | Unit |
|--------------------------------|-------|------|
| Diesel dismantling and sorting | 0.04  | MJ   |
| Electricity for sorting        | 0.01  | kWh  |

90.0% of the steel is recycled, 10.0% is sent to landfill.

| Transport to the waste facility (C2) | Value                                           | Unit      |
|--------------------------------------|-------------------------------------------------|-----------|
| Mass to recycling                    | 0.90                                            | kg        |
| Mass to landfill                     | 0.10                                            | kg        |
| Distance to recycling by truck       | 50.00                                           | km        |
| Distance to landfill by truck        | 50.00                                           | km        |
| Truck: Activity                      | transport, freight, lorry >32 metric ton, EURO6 | -         |
| Truck: Capacity utilization          | 53.30                                           | %         |
| Truck: Distance                      | 50.00                                           | km        |
| Truck: Energy demand                 | 1.58                                            | MJ / t*km |

| Waste processing (C3)  | Value | Unit |
|------------------------|-------|------|
| Material for recycling | 0.90  | kg   |

| Disposal (C4)         | Value | Unit |
|-----------------------|-------|------|
| Material for landfill | 0.10  | kg   |

| Reuse, recovery and/or recycling potentials (D)       | Value | Unit |
|-------------------------------------------------------|-------|------|
| Amount of secondary material that the system takes in | 0     | kg   |
| Substitution of primary steel                         | 0.90  | kg   |

Calculation of benefits and loads per EN 15804+A2.

## LCA: Results

### Core environmental impact indicators

| Indicator      | Unit                             | A1-3     | A4       | C1       | C2       | C3       | C4       | D         |
|----------------|----------------------------------|----------|----------|----------|----------|----------|----------|-----------|
| GWP-total      | kg CO <sub>2</sub> -eq.          | 2.82e+00 | 3.11e-02 | 8.55e-03 | 5.18e-03 | 3.37e-01 | 6.26e-04 | -1.25e+00 |
| GWP-fossil     | kg CO <sub>2</sub> -eq.          | 2.80e+00 | 3.11e-02 | 8.07e-03 | 5.18e-03 | 3.27e-01 | 6.25e-04 | -1.26e+00 |
| GWP-biogenic   | kg CO <sub>2</sub> -eq.          | 1.70e-02 | 1.56e-05 | 4.64e-04 | 2.60e-06 | 9.76e-03 | 6.47e-08 | 1.30e-02  |
| GWP-luluc      | kg CO <sub>2</sub> -eq.          | 1.63e-03 | 1.10e-05 | 8.98e-06 | 1.84e-06 | 1.53e-04 | 3.25e-07 | -2.87e-04 |
| ODP            | kg CFC-11-Eq                     | 5.37e-08 | 6.47e-10 | 1.03e-10 | 1.08e-10 | 4.18e-09 | 1.81e-11 | -3.26e-09 |
| AP             | mol H <sup>+</sup> -Eq           | 1.26e-02 | 7.34e-05 | 4.38e-05 | 1.22e-05 | 1.07e-03 | 4.43e-06 | -4.28e-03 |
| EP-freshwater  | kg P-Eq                          | 9.12e-04 | 2.19e-06 | 5.84e-06 | 3.64e-07 | 1.30e-04 | 5.19e-08 | -6.04e-04 |
| EP-marine      | kg N-Eq                          | 2.57e-03 | 1.92e-05 | 1.92e-05 | 3.21e-06 | 2.77e-04 | 1.69e-06 | -1.02e-03 |
| EP-terrestrial | mol N-Eq                         | 2.69e-02 | 2.08e-04 | 1.99e-04 | 3.47e-05 | 3.01e-03 | 1.84e-05 | -1.09e-02 |
| POCP           | kg NMVOC-Eq                      | 9.02e-03 | 1.27e-04 | 5.97e-05 | 2.12e-05 | 1.03e-03 | 6.60e-06 | -3.81e-03 |
| ADPE           | kg Sb-Eq                         | 4.71e-05 | 8.88e-08 | 9.54e-09 | 1.48e-08 | 1.13e-06 | 9.92e-10 | -2.92e-08 |
| ADPF           | MJ, net calorific value          | 4.17e+01 | 4.66e-01 | 1.17e-01 | 7.77e-02 | 4.52e+00 | 1.53e-02 | -1.16e+01 |
| WDP            | m <sup>3</sup> world Eq deprived | 8.00e-01 | 2.34e-03 | 9.85e-04 | 3.90e-04 | 2.90e-01 | 4.29e-05 | -1.27e-01 |

**GWP-total:** Global Warming Potential - total **GWP-fossil:** Global warming potential - fossil **GWP-biogenic:** Global Warming Potential - biogenic **GWP-luluc:** Global Warming Potential - luluc **ODP:** Depletion potential of the stratospheric ozone layer **AP:** Acidification potential, Accumulated Exceedance **EP-freshwater:** Eutrophication potential - freshwater **EP-marine:** Eutrophication potential - marine **EP-terrestrial:** Eutrophication potential - terrestrial **POCP:** Photochemical Ozone Creation Potential **ADPE:** Abiotic depletion potential - non-fossil resources **ADPF:** Abiotic depletion potential - fossil resources **WDP:** Water (user) deprivation potential

### Additional indicators

| Indicator | Unit              | A1-3     | A4       | C1       | C2       | C3       | C4       | D         |
|-----------|-------------------|----------|----------|----------|----------|----------|----------|-----------|
| PM        | disease incidence | 1.82e-07 | 3.03e-09 | 1.04e-09 | 5.04e-10 | 4.49e-08 | 1.01e-10 | -6.40e-08 |
| IRP       | kBq U235-Eq       | 5.12e-01 | 5.67e-04 | 1.04e-03 | 9.44e-05 | 8.60e-02 | 9.77e-06 | 4.13e-02  |
| ETP-fw    | CTUe              | 2.07e+01 | 1.11e-01 | 2.18e-02 | 1.84e-02 | 2.46e+00 | 2.10e-03 | -1.15e+02 |
| HTP-c     | CTUh              | 4.92e-08 | 1.99e-10 | 2.25e-11 | 3.31e-11 | 6.83e-09 | 2.83e-12 | -4.37e-07 |
| HTP-nc    | CTUh              | 4.46e-08 | 3.08e-10 | 3.75e-11 | 5.13e-11 | 1.50e-08 | 2.75e-12 | 4.59e-10  |
| SQP       | dimensionless     | 1.49e+01 | 4.69e-01 | 1.46e-02 | 7.82e-02 | 1.57e+00 | 3.02e-02 | -1.87e+00 |

**PM:** Potential incidence of disease due to PM emissions **IRP:** Potential Human exposure efficiency relative to U235 **ETP-fw:** Potential Comparative Toxic Unit for ecosystems **HTP-c:** Potential Comparative Toxic Unit for humans - cancer effects **HTP-nc:** Potential Comparative Toxic Unit for humans - non-cancer effects **SQP:** Potential Soil quality index

**IRP:** 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.

**ETP-fw, HTP-c, HTP-nc and SQP:** The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with these indicators.

## Use of resources

| Indicator | Unit | A1-3     | A4       | C1       | C2       | C3       | C4       | D         |
|-----------|------|----------|----------|----------|----------|----------|----------|-----------|
| PERE      | MJ   | 8.02e+00 | 7.40e-03 | 1.65e-02 | 1.23e-03 | 1.57e+00 | 1.42e-04 | 9.70e-01  |
| PERM      | MJ   | 0        | 0        | 0        | 0        | 0        | 0        | 0         |
| PERT      | MJ   | 8.02e+00 | 7.40e-03 | 1.65e-02 | 1.23e-03 | 1.57e+00 | 1.42e-04 | 9.70e-01  |
| PENRE     | MJ   | 4.17e+01 | 4.66e-01 | 1.17e-01 | 7.77e-02 | 4.52e+00 | 1.53e-02 | -1.16e+01 |
| PENRM     | MJ   | 0        | 0        | 0        | 0        | 0        | 0        | 0         |
| PENRT     | MJ   | 4.17e+01 | 4.66e-01 | 1.17e-01 | 7.77e-02 | 4.52e+00 | 1.53e-02 | -1.16e+01 |
| SM        | kg   | 6.76e-01 | 0        | 0        | 0        | 0        | 0        | 9.00e-01  |
| RSF       | MJ   | 0        | 0        | 0        | 0        | 0        | 0        | 0         |
| NRSF      | MJ   | 0        | 0        | 0        | 0        | 0        | 0        | 0         |
| FW        | m³   | 2.44e-02 | 6.78e-05 | 3.25e-05 | 1.13e-05 | 7.02e-03 | 1.59e-05 | -2.08e-03 |

**PERE:** Primary energy resources - renewable: use as energy carrier **PERM:** Primary energy resources - renewable: used as raw materials **PERT:** Primary energy resources - renewable: total **PENRE:** Primary energy resources - non-renewable: use as energy carrier **PENRM:** Primary energy resources - non-renewable: used as raw materials **PENRT:** Primary energy resources - non-renewable: total **SM:** Use of secondary material **RSF:** Renewable secondary fuels **NRSF:** Non-renewable secondary fuels **FW:** Net use of fresh water

## Waste flows

| Indicator | Unit | A1-3     | A4       | C1       | C2       | C3       | C4       | D         |
|-----------|------|----------|----------|----------|----------|----------|----------|-----------|
| HWD       | kg   | 1.72e+00 | 6.78e-04 | 2.18e-04 | 1.13e-04 | 3.89e-01 | 1.70e-05 | 8.52e-02  |
| NHWD      | kg   | 5.36e+00 | 1.36e-02 | 2.87e-02 | 2.26e-03 | 4.66e-01 | 3.90e-04 | -3.59e+00 |
| RWD       | kg   | 1.23e-04 | 1.40e-07 | 3.09e-07 | 2.34e-08 | 1.99e-05 | 2.38e-09 | 8.61e-06  |

**HWD:** Hazardous waste disposed **NHWD:** Non hazardous waste disposed **RWD:** Radioactive waste disposed

## Output flows

| Indicator | Unit | A1-3     | A4 | C1 | C2 | C3       | C4 | D |
|-----------|------|----------|----|----|----|----------|----|---|
| CRU       | kg   | 0        | 0  | 0  | 0  | 0        | 0  | 0 |
| MFR       | kg   | 2.83e-05 | 0  | 0  | 0  | 9.00e-01 | 0  | 0 |
| MER       | kg   | 0        | 0  | 0  | 0  | 0        | 0  | 0 |
| EEE       | MJ   | 0        | 0  | 0  | 0  | 0        | 0  | 0 |
| EET       | MJ   | 0        | 0  | 0  | 0  | 0        | 0  | 0 |

**CRU:** Components for re-use **MFR:** Materials for recycling **MER:** Materials for energy recovery **EEE:** Exported electrical energy **EET:** Exported thermal energy

| Name                                              | Value | Unit |
|---------------------------------------------------|-------|------|
| Biogenic carbon content in product                | 0     | kg C |
| Biogenic carbon content in accompanying packaging | 0     | kg C |

## Additional requirements

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

Electricity consumption in the manufacturing phase is composed from the source below. Electricity is represented by data in ecoinvent 3.10 regionalised for Germany.

| Electricity           | Unit                          | Value |
|-----------------------|-------------------------------|-------|
| Electricity from grid | kg CO <sub>2</sub> -eq. / kWh | 0.84  |

### Dangerous substances

The product contains no hazardous substances given by the REACH Candidate List or the Norwegian Priority List.

## Additional environmental information

### Additional environmental impact indicators required in NPCR Part A for construction products

| Indicator | Unit                    | A1-3     | A4       | C1       | C2       | C3       | C4       | D         |
|-----------|-------------------------|----------|----------|----------|----------|----------|----------|-----------|
| GWP-IOBC  | kg CO <sub>2</sub> -eq. | 2.81e+00 | 3.11e-02 | 8.11e-03 | 5.18e-03 | 3.28e-01 | 6.26e-04 | -1.26e+00 |

**GWP-IOBC:** Global Warming Potential - Instantaneous oxidation of biogenic carbon

## Bibliography

|                       |                                                                                                                                          |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| CEN/TR 15941:2010     | Sustainability of construction works - Environmental product declarations - Methodology for selection and use of generic data            |
| EN 15804:2012+A2:2019 | Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products |
| EN 15942:2022-04      | Sustainability of construction works - Environmental product declarations - Communication format business-to-business                    |
| ISO 14025:2011-10     | Environmental labels and declarations - Type III environmental declarations - Principles and procedures                                  |
| ISO 14040:2021-02     | Environmental management - Life cycle assessment - Principles and framework                                                              |
| ISO 14044:2021-02     | Environmental management - Life cycle assessment - Requirements and guidelines                                                           |
| ecoinvent v3.10       | ecoinvent, Zurich, Switzerland, database version 3.10                                                                                    |
| NPCR 013:2021         | Product category rules, Part B: Steel and aluminium construction products. Issue date: 06.10.2021; validity extended to 30.06.2026.      |
| NPCR Part A:2021      | Construction products and services, Version 2.0. Issue date: 24.03.2021; validity extended to 24.03.2026.                                |

|                                                                                                                                             |                                                 |       |                                                                                    |
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|                                                          | ECO Platform<br>ECO Portal                      | Web   | <a href="http://www.eco-platform.org">www.eco-platform.org</a>                     |
|                                                                                                                                             |                                                 | Web   | <a href="#">ECO Portal</a>                                                         |
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