TUBE SOLUTIONS

Heléns

EPD®

Welded tubes

Environmental Product Declaration

In accordance with ISO 14025:2006 / 21930:2017 and EN 15804:2012+A2:2019/AC:2021

Programme: The International EPD® System, www.environdec.com
Programme operator: EPD International AB
EPD registration number: S-P-03795
Date of publication (issue): 2022-10-10
Date of validity: 2027-10-10

CONTENT

COMPANY INFORMATION

Heléns stocks, processes and delivers Scandinavia's widest range of steel tube solutions. In close cooperation with our customers, we develop an optimal setup – from construction and production to logistic or business solutions – where tubes, bars and sections become a crucial ingredient for success.

Heléns, with its almost 300 employees, is a steel supplier and tube specialist with a warehouse that handles more than 100.000 tons of tubes every year. The head office is located in Halmstad, Sweden and sales offices in Malmö, Västerås and Örnsköldsvik. Other operations are conducted through wholly-owned subsidiaries in Denmark and Lithuania, and an associated company in Finland. Clients are mainly found within the construction, automotive, engineering, furniture and leisure, and processing industries. In other words; Heléns' tubes, bars and sections are used in several thousand ways.

With respect for and awareness of the environmental footprint of the industry, we strive toward long-term sustainability in all that we do. Through the environmental management system ISO 14 001, we have excellent opportunities to improve the business. We are convinced that active environmental work gives both us and our partners lasting competitive advantages. Through our sustainability work, Heléns wants to contribute to a better environment today and tomorrow.

OUR OWNERS

Since the end of 2019, Heléns have been a part of Van Leeuwen Pipe and Tube Group, which is an international distribution company specializing in steel tubes, and pipe and tube applications. The family-owned company, with its head office in Zwijndrecht, the Netherlands, was founded in 1924 and is active in virtually all industrial sectors. The company's 2021 turnover amounted to € 1,431million, and the group has more than forty branches spread throughout Europe, the Middle East, Asia, Australia, and North America.

CERTIFICATIONS

Product-related or management system-related certifications:

- ISO 14001-certificate
- ISO 9001-certificate

PRODUCT INFORMATION

Product name	Welded tubes
Product identification	EN 10219
UN CPC code	412

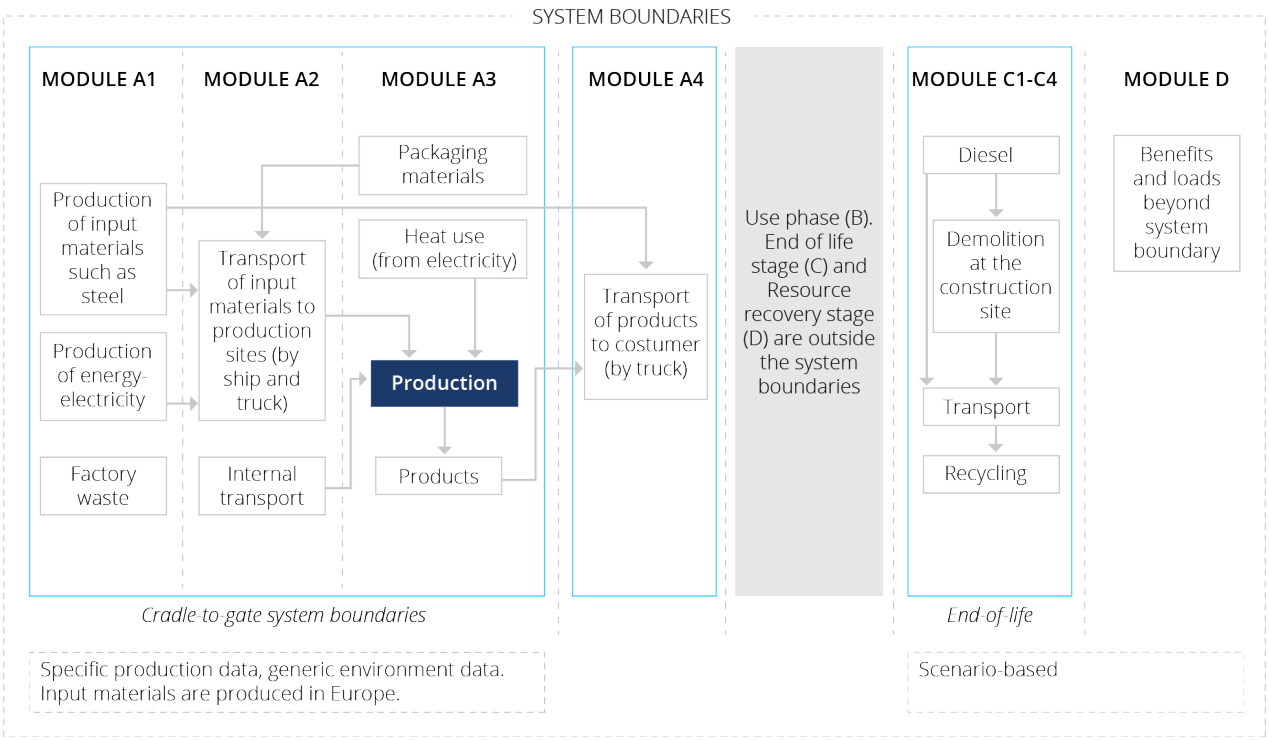
PRODUCT DESCRIPTION

Our hollow tubular sections are cold-formed produced from hot-rolled steel coils. These products are used in building constructions and civil engineering as complement to beam profiles. As steel is 100% recyclable these products will after their lifetime be recycled and offer a sustainable alternative.

LCA INFORMATION

- **Declared unit:** 1 metric ton of product including packaging
- **Reference service life:** Not applicable
- **Time representativeness:** The specific data was collected from year 2020.
- **Database(s) and LCA software used:** The software system used for the calculation was SimaPro release 9.3.0.31. The datasets used were taken from the database Ecoinvent 3.8 and material-specific EPD.
- **Description of system boundaries:** The LCA analysis was made as "cradle to gate with additions", and includes modules A1-A3 and, C1-C4 and D, i.e. raw materials (A1), transport of raw materials and components to the factory (A2), energy and resource consumption at the factory (A3) and the final management phase (C1-C4) and benefits outside the system boundaries (D). See figure below for an overview.
- **Excluded lifecycle stages:** Modules A5 and B1-B5 are not included in the calculations.
- **Cut-off rule:** 1% cut-off rule was applied for input flows in the inventory.
- **Data quality:** The production data has been collected from the production site at Heléns Rör as well as their subcontractor and is representative for 2020. The database data are from 2021.

SYSTEM DIAGRAM



SCENARIO-BASED CALCULATION

End of life C1-C4: It has been assumed that 95% of the products are collected from their point of installation after their expected service life. The rest of the 5% is assumed to be left in the ground. It is assumed that fragging of the steel products takes place on the demolition site to minimize transports. The product is thereafter transported (50 km) to a waste treatment site where the material can be recycled. Average transport distance for steel to waste processing is assumed to be 50 km. It is estimated that there is no mass loss during the use of the product.

Resource recovery stage (D): In this module benefits that arise due to circular functions in the system are reported. The steel is assumed to be recycled and included in new steel production as a replacement for steel production. The recycled steel has been modelled to avoid use of primary material. The scrap content in the studied steel product has been acknowledged and only the mass of primary steel in the product provides the benefit in order to avoid double counting.

Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation:

		MODULE	MODULES DECLARED	GEOGRAPHY	SPECIFIC DATA USED	VARIATION PRODUCTS	VARIATION SITES
PRODUCT STAGE	Raw material supply	A1	X	EU	65%	+/- 10%	Not relevant
	Transport	A2	X	EU			
	Manufacturing	A3	X	SE			
CONSTRUCTION PROCESS STAGE	Transport	A4	X	SE	65%	+/- 10%	Not relevant
	Construction installation	A5	ND	-			
USE STAGE	Use	B1	ND	-	-	-	-
	Maintenance	B2	ND	-	-	-	-
	Repair	B3	ND	-	-	-	-
	Replacement	B4	ND	-	-	-	-
	Refurbishment	B5	ND	-	-	-	-
	Operational energy use	B6	ND	-	-	-	-
	Operational water use	B7	ND	-	-	-	-
END OF LIFE STAGE	De-construction demolition	C1	X	SE	Scenario-based	-	-
	Transport	C2	X	SE		-	-
	Waste processing	C3	X	SE		-	-
	Disposal	C4	X	SE		-	-

RESOURCE RECOVERY STAGE	Reuse – recovery – recycling – potential	D	X	SE	-	-	-

CONTENT INFORMATION

PRODUCT COMPONENTS	WEIGHT KG	POST-CONSUMER MATERIAL WEIGHT-%	RENEWABLE MATERIAL WEIGHT-%
Steel	1000	0	0
Total	**1000**	**0**	**0**

PACKAGING MATERIALS	WEIGHT KG	WEIGHT-% (VERSUS THE PRODUCT)
Steel strap	0,27	0,027
Plastic strap	0,02	0,002
Total	**0,29**	**0,029**

- Due to the low mass share compared to steel, no modelling of the wooden pallets was carried out. It can also be assumed that the environmental impact of wood pallets will not exceed 1%.
- The product does not contain any substances listed in the "Candidate List of Substances of Very High Concern (SVHC) for authorization" exceeding 0.1% of the weight of the product.

ENVIRONMENTAL INFORMATION

POTENTIAL ENVIRONMENTAL IMPACT

Mandatory indicators

- According to EN 15804
- Results per or declared unit

INDICATOR	UNIT	A1-A3	A4	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	2,59E+03	4,40E+01	2,67E+00	4,31E+00	0,00E+00	0,00E+00	-8,49E+02
GWP- biogenic	kg CO_2 eq.	6,70E+00	3,80E-02	9,43E-04	4,19E-03	0,00E+00	0,00E+00	9,53E+00
GWP-luluc	kg CO_2 eq.	6,65E-01	1,76E-02	2,67E-04	1,55E-03	0,00E+00	0,00E+00	3,28E-01
GWP-total	kg CO_2 eq.	2,60E+03	4,40E+01	2,67E+00	4,32E+00	0,00E+00	0,00E+00	-8,39E+02
ODP	kg CFC 11 eq.	2,56E-05	1,02E-05	5,71E-07	1,03E-06	0,00E+00	0,00E+00	4,62E-05
AP	mol H^+ eq.	7,35E+00	1,25E-01	2,78E-02	1,80E-02	0,00E+00	0,00E+00	-7,26E-01
EP- freshwater*	kg P eq.	3,14E-02	2,88E-03	8,28E-05	2,68E-04	0,00E+00	0,00E+00	4,90E-01
EP-marine	kg N eq.	1,72E+00	2,54E-02	1,23E-02	5,49E-03	0,00E+00	0,00E+00	-1,37E-01
EP- terrestrial	mol N eq.	1,84E+01	2,77E-01	1,35E-01	6,00E-02	0,00E+00	0,00E+00	-1,38E+00
POCP	kg NMVOC eq.	5,75E+00	1,06E-01	3,71E-02	1,93E-02	0,00E+00	0,00E+00	2,16E-01
ADP-minerals & metals**	kg Sb eq.	2,72E-03	1,56E-04	1,37E-06	9,88E-06	0,00E+00	0,00E+00	1,28E-02
ADP-fossil**	MJ	2,80E+04	6,67E+02	3,67E+01	6,72E+01	0,00E+00	0,00E+00	-8,13E+03
WDP	m^3	1,31E+04	2,04E+00	5,95E-02	2,33E-01	0,00E+00	0,00E+00	2,68E+02
Acronyms	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. EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment. EP-terrestrial = Eutrophication potential, Accumulated Exceedance. POCP = Formation potential of tropospheric ozone. ADP-minerals & metals = Abiotic depletion potential for non-fossil resources. ADP-fossil = Abiotic depletion of fossil resources potential. WDP = Water (user) deprivation potential, deprivation-weighted water consumption.							

* The EP-freshwater indicator is calculated in unit kg P eq.

** 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.

Additional mandatory and voluntary indicators

- Results per declared unit

INDICATOR	UNIT	A1-A3	A4	C1	C2	C3	C4	D
GWP-GHG[1]	kg CO2 eq.	2,59E+03	4,40E+01	2,67E+00	4,32E+00	0,00E+00	0,00E+00	-8,47E+02

1 The indicator includes all greenhouse gases included in GWP total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

USE OF RESOURCES

- Results per declared unit

INDICATOR	UNIT	A1-A3	A4	C1	C2	C3	C4	D
PERE	MJ	7,52E+02	9,53E+00	2,06E-01	8,55E-01	0,00E+00	0,00E+00	1,03E+03
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	7,52E+02	9,53E+00	2,06E-01	8,55E-01	0,00E+00	0,00E+00	1,03E+03
PENRE	MJ	2,92E+04	7,08E+02	3,89E+01	7,13E+01	0,00E+00	0,00E+00	-8,58E+03
PENRM	MJ.	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	2,92E+04	7,08E+02	3,89E+01	7,13E+01	0,00E+00	0,00E+00	-8,58E+03
SM	kg	1,33E+01	-	-	-	-	-	-
RSF	MJ	4,21E-20	-	-	-	-	-	-
NRSF	MJ	4,93E-19	-	-	-	-	-	-
FW	m^3	-4,98E-01	-	-	-	-	-	-
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials PERM = Use of renewable primary energy resources used as raw materials PERT = Total use of renewable primary energy resources PENRE = Use of non-renewable primary energy excl. non-renewable primary energy resources used as raw materials PENRM = Use of non-renewable primary energy resources used as raw materials PENRT = Total use of non-renewable primary energy resources SM = Use of secondary material RSF = Use of renewable secondary fuels NRSF = Use of non-renewable secondary fuels FW = Use of net fresh water Energy stored as material in the packaging material is direct balanced out and not reported (<5%)							

WASTE PRODUCTION AND OUTPUT FLOWS

Waste production

- Results per functional or declared unit

INDICATOR	UNIT	A1-A3	A4	C1	C2	C3	C4	D
Hazardous waste disposed	kg	4,62E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	kg	4,00E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	kg	8,68E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Output flows

- Results per functional or declared unit

INDICATOR	UNIT	A1-A3	A4	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	4,20E+01	0,00E+00	9,50E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy recovery	kg	7,01E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

INFORMATION ON BIOGENIC CARBON CONTENT

- Results per functional or declared unit

BIOGENIC CARBON CONTENT	UNIT	QUANTITY
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0*

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2.

* No information regarded biogenic content in the plastic straps are available, the straps are produced by recirculated polyester material.

PROGRAM INFORMATION

Program:	The International EPD® System EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden www.environdec.com
EPD registration number:	S-P-03795
Publication date:	2022-10-10
Valid until:	2027-10-10

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

CEN standard	EN 15804 serves as the core product category rules (PCR)
Product category rules (PCR):	PCR 2019:14 Construction products. Version 1.11. 2021-02-05.
PCR review was conducted by:	The Technical Committee of the International EPD® System. Chair: Claudia A. Peña. Contact via info@environdec.com
Independent third-party verification of the declaration and data, according to ISO 14025:2006:	☐ EPD process certification ☒ EPD verification
Third-party verifier:	Martin Erlandsson IVL Svenska Miljöinstitutet
In case of accredited certification bodies: Accredited by:	<name of the accreditation body and accreditation number, where applicable>
In case of recognized individual verifiers: Approved by:	The International EPD® System
Procedure for follow-up of data during EPD validity involves a 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 from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

DIFFERENCES VERSUS PREVIOUS VERSIONS

- Version: 1

REFERENCES

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

- PCR Construction Products (2019:14), version 1.1
- EN 15804:2012 + A2:2019 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
- ISO 14025:2006 Environmental labels and declarations. Type III environmental declarations.
- Principles and procedures.
- ISO 14044:2006 Environmental management. Life Cycle Assessment. Requirements and guidelines.
- Domhagen, M. LCA Report Steel products, 2022-06-07. WPS.

CONTACT INFORMATION

EPD owner	Heléns Rör AB Box 101 | SE-301 04 Halmstad Sweden www.helens.se Stefan Kvarnström
Subcontractor	Forshaga, Sweden
LCA author	Malin Domhagen, WSP
Program operator	EPD International AB info@environdec.com