

Environmental Product Declaration



In accordance with ISO 14025 for:

Hollow Structural Sections (HSS)

from

Welded Tube of Canada



Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
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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.



Programme information

Programme:	<p>The International EPD® System</p> <p>EPD International AB Box 210 60 SE-100 31 Stockholm Sweden</p> <p>www.environdec.com info@environdec.com</p>
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<p>Product category rules (PCR): <i>Construction Products 2019:14 Version 1.2.3 Updated 2022-07-08 and Valid Until 2024-12-20 UN CPC-421 from the International EPD System.</i></p>
<p>PCR review was conducted by: Martin Erlandsson, IVL Swedish Environmental Research Institute, martin.erlandsson@ivl.se</p>
<p>Independent third-party verification of the declaration and data, according to ISO 14025:2006:</p> <p><input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification</p>
<p>Third party verifier: <i>James Mellentine, Thrive ESG</i></p> <p><i>In case of recognised individual verifiers:</i> Approved by: The International EPD® System</p>
<p>Procedure for follow-up of data during EPD validity involves third party verifier:</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

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. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison.

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. The EPD is in conformity with EN 15804:2012+A2:2019/AC:2021.

Company information

Owner of the EPD:

Jeff Cooper, Welded Tube of Canada, 905-669-1111, jcooper@weldedtube.com, 111 Rayette Rd, Concord, ON, Canada L4K 2E9

Description of the organisation:

The Welded Tube of Canada Group of Companies is a diversified steel pipe and tube producer with annual production capacity of 700,000 tons. Headquartered in Concord, Ontario, Canada, Welded Tube owns and operates five manufacturing and finishing facilities strategically located in Canada and the U.S. to ideally serve the North American marketplace. Founded in 1970, Welded Tube has three divisions: Energy Tubulars (OCTG), ERW Mechanical and HSS. Through continued investment in state-of-the-art equipment, technology and operating systems, Welded Tube and its employees are recognized as industry leaders in each of their three business groups. Their commitment to providing excellence in product quality, service and ultimate value to a diversified customer base is unassailable.

Name and location of production site:

Two manufacturing locations

50 Bowes Rd, Concord, Ontario, Canada, L4K 1J6

111 Rayette Rd, Concord, Ontario, Canada, L4K 2E9

Product information

Product name:

Hollow Structural Sections (HSS)

Product identification:

Welded Tube of Canada specialize in commodity grades such as A500 and highly technical tubes such as rollover protective structures (ROPS) / falling object protective structure (FOPS). Our quick change and high-speed HSS tube mills allow for maximum flexibility to meet our customer's ever-changing demands.

Product description:

Welded Tube of Canada Hollow Structural Sections (HSS) are cold formed, welded, steel tubing, produced in round, square, rectangular, oval and combinations of these shapes. They are manufactured in a broad range of dimensions, gauges, and lengths. Hollow Structural Sections (HSS) are used as structural elements in buildings, bridges, racking systems, agricultural implements, and a variety of other manufactured products.

UN CPC code:

UN CPC 421

Geographical scope:

North America

LCA information

Functional unit / declared unit:

The declared unit is per metric tonne steel construction product.

Time representativeness:

The provided data is from 2018-2021 for suppliers and HSS manufacturing.

Database(s) and LCA software used:

GaBi LCA Software Version 8.0

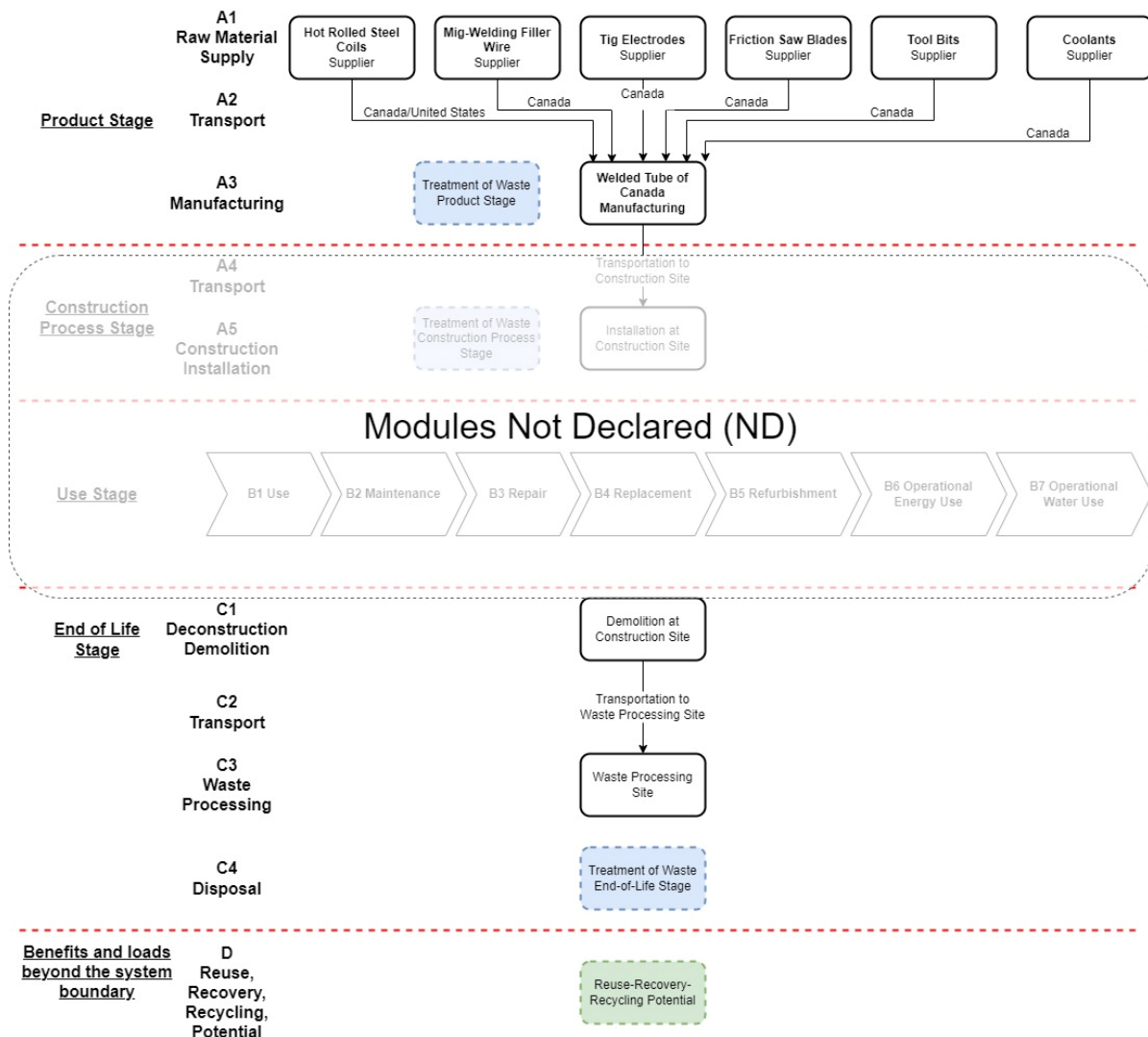
Sphera Database Version 2022

US LCI Database 2022

CDI Database 2022

AISI Database 2022

System diagram:



Welded Tube of Canada HSS Life Cycle Diagram

Description of system boundaries:

The system boundaries for the cradle-to-gate LCA include raw material supply, transportation, manufacturing, and end-of-life processing.

Life cycle stage	Life cycle module	EPD Type a) Cradle-to-gate + modules C and D
		Declared Unit
A1-A3 Product Stage	A1) Raw material supply	X
	A2) Transport	X
	A3) Manufacturing	X
A4-A5 Construction process stage	A4) Transport	ND
	A5) Construction installation	ND
B1-B7 Use stage	B1) Use	ND
	B2) Maintenance	ND
	B3) Repair	ND
	B4) Replacement	ND
	B5) Refurbishment	ND
	B6) Operational energy use	ND
	B7) Operational water use	ND
C1-C4 End of life stage	C1) Deconstruction, demolition	X
	C2) Transport	X
	C3) Waste processing	X
	C4) Disposal	X
D Benefits and loads beyond the system boundary	D) Reuse, recovery, recycling, potential	X

More information:

Welded Tube of Canada
weldedtube.com

LCA practitioner contact information:

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Content declaration

Product

Materials / chemical substances	kg /tonne steel construction product	%	Environmental / hazardous properties
Hot Rolled Steel Coils	1000	100	

Packaging

Distribution packaging:

No packaging required

Consumer packaging:

No packaging required

Recycled material

Provenience of recycled materials (pre-consumer or post-consumer) in the product:

According to 2020 Life Cycle Inventories of North American Steel Products report, 47% of hot rolled steel coils is derived from post-consumer steel scrap.

Environmental performance

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Indicator name and abbreviation	Unit	Module					
		A1-A3	C1	C2	C3	C4	D
Core environmental impact indicators		A1-A3	C1	C2	C3	C4	D
Climate Change - total	kg CO ₂ eq.	1701.06	1.81	20.4	0	5.58	-716.12
Climate Change - fossil	kg CO ₂ eq.	1697.74	1.81	20.4	0	5.5	-715
Climate Change - biogenic	kg CO ₂ eq.	2.85	3.38E-03	0	0	7.84E-02	-1.11E+00
Climate Change - LULUC	kg CO ₂ eq.	4.63E-01	1.58E-04	0	0	6.76E-04	-1.48E-02
GWP-GHG	kg CO ₂ eq.	1698.21	1.81	20.40	0	5.50	-715.01
Ozone depletion	kg CFC-11 eq.	1.30E-09	7.30E-12	5.17E-10	0	6.42E-11	-1.56E-12
Acidification	Mole of H ⁺ eq.	4.35	7.04E-03	1.38E-01	0	2.93E-02	-1.54
Eutrophication, freshwater	kg P eq.	1.42E-03	3.10E-06	5.68E-06	0	1.72E-05	-1.30E-04
Eutrophication, marine	kg N eq.	1.05	1.23E-03	5.39E-02	0	7.71E-03	-2.70E-01
Eutrophication, terrestrial	mol N eq.	11.38	1.31E-02	5.88E-01	0	8.48E-02	-2.37
Photochemical ozone formation	kg NMVOC eq.	3.17	3.49E-03	1.58E-01	0	2.32E-02	-1.10
Abiotic depletion potential, minerals & metals ²	kg Sb eq.	6.80E-03	5.43E-07	0	0	9.76E-07	-1.78E-03
Abiotic depletion potential, fossil resources ²	MJ	21203.94	37.4	256	0	82.5	-6570
Water use ²	m ³ world eq. deprived	255.16	6.75E-01	0	0	-3.35	-133.00
Additional environmental impact indicators		A1-A3	C1	C2	C3	C4	D
Particulate Matter emissions	Disease incidence	3.53E-03	4.83E-08	4.41E-07	0	3.93E-06	-2.17E-05
Ionizing radiation, human health ¹	kBq U235 eq.	54.39	5.17E-01	4.49E-18	0	7.48E-02	-16.10
Eco-toxicity (freshwater) ²	CTUe	6675.30	14.80	1080	0	54.10	-405.00
Human toxicity, cancer effects ²	CTUh	5.65E-04	8.87E-10	5.38E-09	0	8.23E-09	-2.92E-07
Human toxicity, non-cancer effects ²	CTUh	7.46E-05	1.48E-08	5.05E-07	0	4.13E-07	-9.65E-06
Land use related impacts/ Soil quality ²	dimensionless	1303.40	8.64	0	0	4.07	-493.00
Indicators describing resource use		A1-A3	C1	C2	C3	C4	D
Use of renewable primary energy as energy carrier	MJ	986.00	35.1	0	0	4.57	-317
Use of renewable primary energy resources used as raw materials	MJ	0	2.57E-10	0	0	1.01E-10	-8.57E-05
Total use of renewable primary energy	MJ	986.00	35.10	0	0	4.57	-317.00
Use of non-renewable primary energy as energy	MJ	21290.00	37.9	256	0	84.2	-6570

Indicator name and abbreviation	Unit	Module					
		A1-A3	C1	C2	C3	C4	D
carrier							
Use of non-renewable primary energy resources used as raw materials	MJ	1.67E-01	8.48E-04	0	0	3.24E-10	-2.01E-01
Total use of non-renewable primary energy resource	MJ	21290.17	37.90	256	0	84.20	-6570.20
Secondary material	kg	469.00	0	0	0	0	0
Renewable secondary fuels	MJ	0	0	0	0	0	0
Non-renewable secondary fuels	MJ	0	0	0	0	0	0
Net use of fresh water	m ³	8.40	8.91E-02	0	0	-7.80E-02	-3.00
Environmental information describing waste categories		A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.84E-03	1.31E-09	0	0	1.62E-05	-5.07E-08
Non-hazardous waste disposed	kg	59.58	1.35E-02	0	0	118	-23.30
Radioactive waste disposed	kg	0.66	6.45E-03	0	0	9.36E-04	8.17E-04
Environmental information describing output flows		A1-A3	C1	C2	C3	C4	D
Components for reuse	kg	0	0	0	0	0	0
Material for recycling	kg	56.00	0	0	0	882	0
Materials for energy recovery	kg	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0
<p>Disclaimer 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.</p> <p>Disclaimer 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.</p>							

The share of the GWP-GHG results in A1-A3 coming from product-specific LCI data is >90%.



References

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