



Pressure pipes

Environmental Product Declaration (EPD)
In accordance with ISO 14025 and EN 15804:2012+A2:2019

S-P-05437, version 1.0
UN CPC 412
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1. SSAB

1.1 DESCRIPTION OF THE ORGANISATION

SSAB is the leading steel tube manufacturer in the Nordic countries with a broad selection of products to meet the needs of the construction, automotive and manufacturing industries. SSAB is also one of the leading suppliers of steel infrastructure products in Europe especially for foundation construction. Extensive range of products include structural hollow sections, precision tubes, cold-formed open sections, steel piles, retaining walls, safety barrier systems, trapezoidal sections and water mains. We expertise in high-strength steels and aim at exceeding expectations by continuously developing our operations and products keeping customer's business on focus.

1.2 PRODUCT-RELATED OR MANAGEMENT SYSTEM-RELATED CERTIFICATIONS

Quality management system certification (ISO 9001:2015 91 6 59-2011-AQ-FIN-FINAS) and Environmental management system certifications ISO 14001:2015 (91 6 60-2011-AE-FIN-FINAS)

1.3 NAME AND LOCATION OF PRODUCTION SITE(S)

Pressure pipes are manufactured at SSAB's production site in Oulainen, Finland. Coated Pressure pipes also head to Pattijoki for coating process. Hot rolled steel for the production of Pressure pipes is manufactured at SSAB's mill in Raah.

SSAB Europe Oy, Oulainen factory, Pyhäjoentie 16, FI-86300 Oulainen, Finland.

2. Product information

2.1 PRODUCT NAME

Pressure pipe.

Uncoated and coated product versions are presented in this EPD.

2.2 PRODUCT IDENTIFICATION

Large-diameter high pressure pipes are manufactured at Oulainen works. The works produces submerged arc welded steel pipes with a spiral seam (SAWH) in the dimension range Ø 406.4 – 1220 mm. Spirally welded pipes produced by SSAB are characterized by close dimensional and shape tolerances and consistent mechanical properties. Submerged arc welded pipes are manufactured according to the following standards: EN 10217-1: P235TR1, P265TR1 and suitable parts of standard up to P355TR1. EN 10217-5: P235GH TC1, P265GH TC1 and suitable parts of standard up to P355GH TC1.

External coating is done according to standard DIN 30670.

Internal lining with cement mortar is done according to standard EN 10298.

2.3 PRODUCT DESCRIPTION

Pressure pipes are suitable to be used as water main pipes or sewage pipes. Coated pressure pipes external polyethylene coating and internal concrete or epoxy layer are suitable for use with drinking water. Sewage and rainwater use also have suitable coatings available.

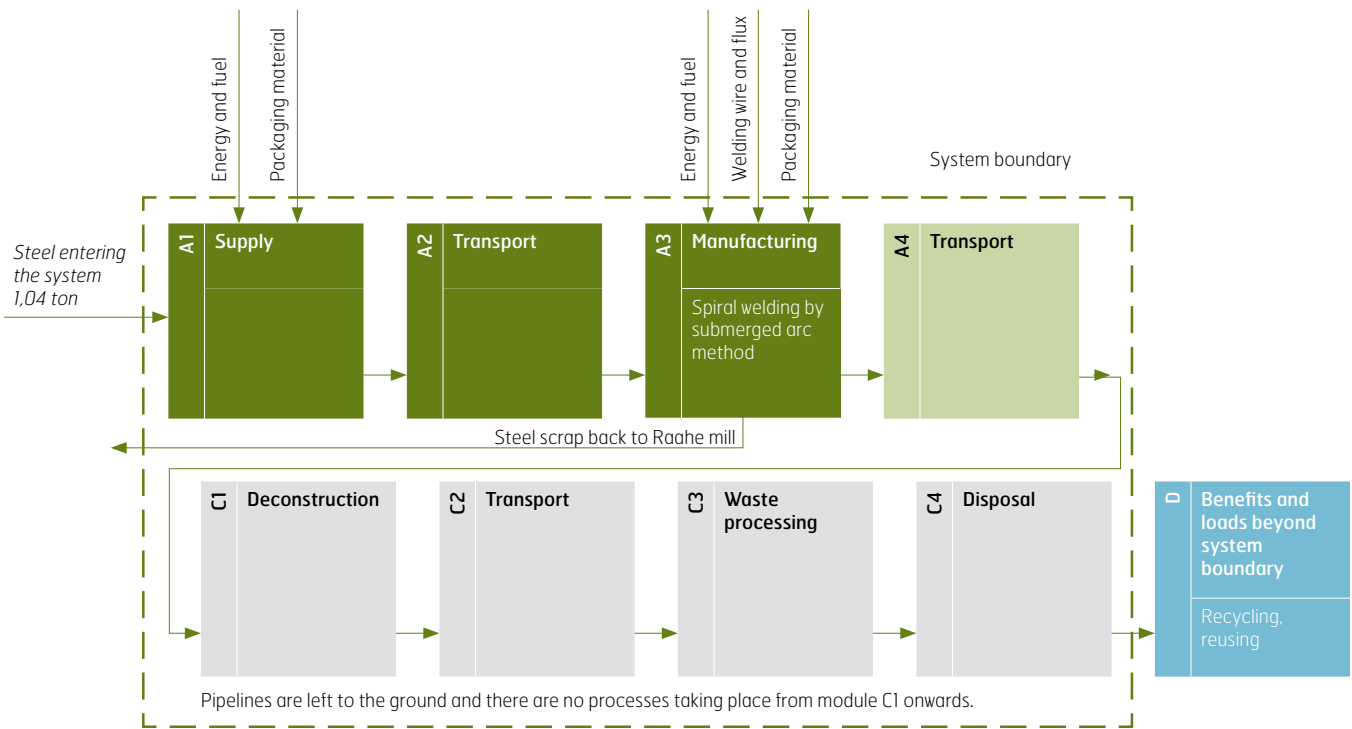
2.4 UN CPC CODE

4128

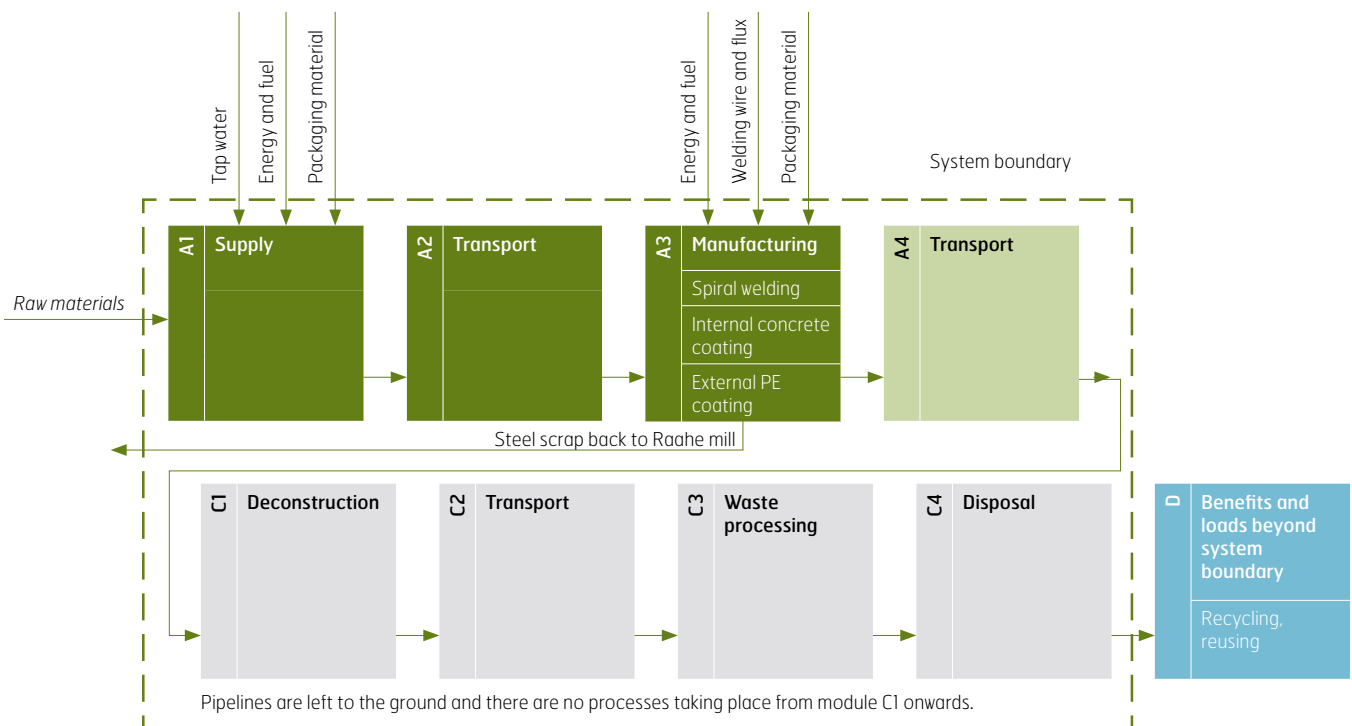
3. LCA information

- **Functional unit / declared unit:** 1 ton Pressure pipe.
- **Reference service life:** If properly installed and maintained, the default service lifetime of the product is 100 years. However, the product’s technical attributes enable a service life of up to 150 years.
- **Time representativeness:** The data is collected from year 2019. The database data is from 2021.
- **Databases and LCA software used:** SimaPro (release 9.2.0.2). Databases ecoinvent 3.7 and Industry data 2.0.
- **Description of system boundaries:** Cradle to gate with options, modules C1 – C4, and module D (A1 – A3, C, D and additional modules).
 The additional module is A4. Modules A5 and B1-B5 are not assessed. B6 and B7 are not relevant. In B1 – B5, only minimal maintenance is required. The excluded modules are very dependent on particular scenarios for a specific building or construction work.

SYSTEM DIAGRAM: FOR UNCOATED PRESSURE PIPE



SYSTEM DIAGRAM: FOR COATED PRESSURE PIPE



MORE INFORMATION

- **LCA practitioner:** Ecobio Oy, info@ecobio.fi
Electricity in module A3 covers more than 30 % of the total energy in modules A1 – A3. Therefore, the energy sources and climate impacts as g CO₂ eq./kWh. must be informed.
- **Energy sources for electricity:** Market priced electricity with the following energy sources: 20 % renewable, 51 % nuclear and 29 % fossil fuels and peat.
- **Climate change impact of electricity:** 265 g CO₂ eq./kWh.
- **Cut-off rule:** 1% cut-off rule was applied for input flows in the inventory. The material used is as up-to-date as possible and at most five years old for producer specific data and at most ten years old for generic data.
- **Allocation:** Steel scrap produced in module A3 is treated as co-product and environmental impacts are allocated for it based on economic values.
- **Use of secondary material:** Steel production is based on the use of iron ore as a raw material. However, SSAB uses approximately 20 % of scrap steel in conjunction with steel production in the Nordics. The use of raw materials and energy has been optimized in steel production.
- **Scenario for end-of-life stage:** There are no environmental impacts included for Pressure pipes in modules C1 – C4. This is due to the fact that most of the pipelines are left to the ground after their service life. Only a minimal share of the pipelines is dug up after the service life. This share of pipes was not considered in this study mainly because of two reasons: the effect of these pipelines to the overall environmental impacts of the product's life cycle would be minimal and there is very little data available regarding the dug up pipelines to properly model the waste processing.

MODULES DECLARED, GEOGRAPHICAL SCOPE, SHARE OF SPECIFIC DATA (IN GWP-GHG INDICATOR) AND DATA VARIATION

	Product stage		Construction process stage			Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	x	x	x	x	ND	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x
Geography	EU27	EU27	EU27	EU27	-	-	-	-	-	-	-	-	EU27	EU27	EU27	EU27	EU27
Specific data	>90%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	<10%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	not relevant					-	-	-	-	-	-	-	-	-	-	-	-

4. Content information

Beneath is content information regarding 1 ton of uncoated Pressure pipes.

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
Hot rolled steel	1000	2,6 %	0 %
TOTAL	1000	2,6 %	0 %
Packaging materials	Weight, kg	Weight-% (versus the product)	
Wood	4,26	0,4 %	
TOTAL	4,26	0,4 %	

Beneath is content information regarding 1 ton of coated Pressure pipes.

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
Hot rolled steel	799	2,6 %	0 %
Polyethylene (PE)	28,2	0 %	0 %
Epoxy	0,8	0 %	0 %
Adhesive	1,8	0 %	0 %
Polyurethane (PUR)	4,4	0 %	0 %
Concrete	165,4	0 %	0 %
Ethylene-propylene-diene-monomer (EPDM)	0,4	0 %	0 %
TOTAL	1 000	2,08 %	0 %
Packaging materials	Weight, kg	Weight-% (versus the product)	
Wood	3,21	0,3 %	
Plastic	0,11	0,01 %	
TOTAL	3,32	0,33 %	

The product does not contain substances which exceed the limits for registration with the European Chemicals Agency regarding the "Candidate List of Substances of Very High Concern for authorization".



5. Environmental information

POTENTIAL ENVIRONMENTAL IMPACT – MANDATORY INDICATORS ACCORDING TO EN 15804

Results per 1 ton of uncoated Pressure pipes											
Indicator	Unit	A1	A2	A3	Tot. A1-A3	A4	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	2,23E+03	5,74E+00	5,79E+01	2,30E+03	4,73E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP-biogenic	kg CO ₂ eq.	1,86E-01	1,20E-02	-2,24E+00	-2,04E+00	1,13E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP-luluc	kg CO ₂ eq.	5,53E-01	1,60E-03	4,60E-01	1,01E+00	1,59E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP-total	kg CO ₂ eq.	2,24E+03	5,76E+00	5,61E+01	2,30E+03	4,75E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ODP	kg CFC 11 eq.	1,17E-10	1,35E-06	3,93E-06	5,28E-06	1,08E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
AP	mol H ⁺ eq.	6,16E+00	2,38E-02	2,35E-01	6,42E+00	1,90E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EP-freshwater	kg P eq.	1,61E-03	3,74E-04	1,79E-02	1,99E-02	3,18E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EP-freshwater	kg PO ₄ ³⁻	5,94E-04	1,38E-04	6,63E-03	7,37E-03	1,18E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EP-marine	kg N eq.	1,57E+00	7,34E-03	4,88E-02	1,62E+00	5,80E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EP-terrestrial	mol N eq.	1,69E+01	8,01E-02	5,32E-01	1,75E+01	6,33E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
POCP	kg NMVOC eq.	4,63E+00	2,57E-02	1,51E-01	4,81E+00	1,94E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ADP-minerals & metals*	kg Sb eq.	3,62E-03	1,35E-05	2,14E-04	3,85E-03	1,71E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ADP-fossil*	MJ	2,46E+04	8,95E+01	1,47E+03	2,62E+04	7,16E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
WDP	m ³	-1,39E+02	2,85E-01	1,75E+01	-1,21E+02	1,96E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
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 for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

* 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.

POTENTIAL ENVIRONMENTAL IMPACT – MANDATORY INDICATORS ACCORDING TO EN 15804

Results per 1 ton of coated Pressure pipes											
Indicator	Unit	A1	A2	A3	Tot. A1-A3	A4	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	1,92E+03	3,04E+01	8,56E+01	2,04E+03	1,14E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP-biogenic	kg CO ₂ eq.	3,45E+00	7,13E-02	2,28E+00	5,80E+00	2,22E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP-luluc	kg CO ₂ eq.	5,77E-01	9,94E-03	6,16E-01	1,20E+00	4,51E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP-total	kg CO ₂ eq.	1,93E+03	3,05E+01	8,85E+01	2,05E+03	1,14E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ODP	kg CFC 11 eq.	7,69E-06	6,93E-06	3,17E-05	4,63E-05	2,53E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
AP	mol H ⁺ eq.	5,46E+00	1,22E-01	3,81E-01	5,96E+00	1,13E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EP-freshwater	kg P eq.	1,85E-02	2,03E-03	2,37E-02	4,42E-02	6,79E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EP-freshwater	kg PO ₄ ³⁻	6,83E-03	7,51E-04	8,77E-03	1,63E-02	2,51E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EP-marine	kg N eq.	1,38E+00	3,75E-02	7,83E-02	1,49E+00	3,02E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EP-terrestrial	mol N eq.	1,48E+01	4,09E-01	8,36E-01	1,60E+01	3,33E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
POCP	kg NMVOC eq.	4,16E+00	1,26E-01	2,55E-01	4,54E+00	9,16E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ADP-minerals & metals*	kg Sb eq.	3,60E-03	1,03E-04	3,52E-04	4,06E-03	3,55E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ADP-fossil*	MJ	2,26E+04	4,62E+02	2,54E+03	2,56E+04	1,67E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
WDP	m ³	-3,68E+01	1,30E+00	2,51E+01	-1,04E+01	4,13E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
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 for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

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POTENTIAL ENVIRONMENTAL IMPACT – ADDITIONAL MANDATORY AND VOLUNTARY INDICATORS

Results per 1 ton of uncoated Pressure pipes											
Indicator	Unit	A1	A2	A3	Tot. A1-A3	A4	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2,23E+03	5,70E+00	5,75E+01	2,30E+03	4,70E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Particulate matter emissions	Disease incidence	5,76E-05	5,18E-07	1,96E-06	6,00E-05	3,28E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Ionising radiation, human health	kBq U235 eq	1,79E+01	4,59E-01	6,46E+01	8,30E+01	3,74E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Ecotoxicity (freshwater)	CTUe	4,05E+03	6,87E+01	1,17E+03	5,28E+03	5,47E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Human toxicity, cancer effects	CTUh	1,90E-07	2,13E-09	7,66E-08	2,69E-07	1,95E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Human toxicity, noncancer effects	CTUh	1,17E-05	7,38E-08	7,66E-07	1,26E-05	5,56E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Land use related impacts / soil quality	Pt	1,30E+03	1,03E+02	1,61E+03	3,01E+03	4,93E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Results per 1 ton of coated Pressure pipes											
Indicator	Unit	A1	A2	A3	Tot. A1-A3	A4	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	1,92E+03	3,01E+01	8,49E+01	2,04E+03	1,13E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Particulate matter emissions	Disease incidence	5,16E-05	2,20E-06	3,14E-06	5,70E-05	6,97E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Ionising radiation, human health	kBq U235 eq	2,10E+01	2,40E+00	8,97E+01	1,13E+02	8,52E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Ecotoxicity (freshwater)	CTUe	6,08E+03	3,53E+02	1,73E+03	8,16E+03	1,22E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Human toxicity, cancer effects	CTUh	2,96E-07	1,23E-08	7,94E-08	3,87E-07	5,17E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Human toxicity, noncancer effects	CTUh	1,13E-05	3,62E-07	9,71E-07	1,26E-05	1,17E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Land use related impacts / soil quality	Pt	1,27E+03	3,52E+02	1,64E+03	3,26E+03	9,86E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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 equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

USE OF RESOURCES

Results per 1 ton of uncoated Pressure pipes											
Indicator	Unit	A1	A2	A3	Tot. A1-A3	A4	C1	C2	C3	C4	D
PERE	MJ	7,22E+02	1,09E+00	5,65E+02	1,29E+03	9,65E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERM	MJ	0	0	6,55E+01	6,55E+01	0	0	0	0	0	0
PERT	MJ	7,22E+02	1,09E+00	6,31E+02	1,35E+03	9,65E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRE	MJ	2,46E+04	9,01E+01	1,60E+03	2,63E+04	7,20E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRM	MJ	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	2,46E+04	9,01E+01	1,60E+03	2,63E+04	7,20E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
SM	kg	2,60E+00	0	0	2,60E+00	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0
FW	m ³	-1,71E+00	9,56E-03	1,30E+00	-3,95E-01	7,19E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
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 excluding non-renewable primary energy resources used as raw materials; PENRM = Use of nonrenewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water										

Results per 1 ton of coated Pressure pipes											
Indicator	Unit	A1	A2	A3	Tot. A1-A3	A4	C1	C2	C3	C4	D
PERE	MJ	6,87E+02	6,12E+00	6,39E+02	1,33E+03	2,03E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERM	MJ	1,19E+00	0	4,94E+01	5,06E+01	0	0	0	0	0	0
PERT	MJ	6,88E+02	6,12E+00	6,88E+02	1,38E+03	2,03E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRE	MJ	2,27E+04	4,64E+02	2,70E+03	2,59E+04	1,68E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRM	MJ	2,76E+00	0	2,53E+00	5,29E+00	0	0	0	0	0	0
PENRT	MJ	2,27E+04	4,64E+02	2,71E+03	2,59E+04	1,68E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
SM	kg	2,16E+01	0	0	2,16E+01	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0
FW	m ³	1,79E-01	4,68E-02	1,80E+00	2,02E+00	1,51E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
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 excluding non-renewable primary energy resources used as raw materials; PENRM = Use of nonrenewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water										

5.1 WASTE PRODUCTION AND OUTPUT FLOWS

WASTE PRODUCTION

Indicator	Unit	Results per 1 ton of uncoated Pressure pipes									
		A1	A2	A3	Tot. A1-A3	A4	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,94E-05	2,16E-04	6,14E-01	6,15E-01	1,87E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Nonhazardous waste disposed	kg	6,27E+01	7,80E+00	5,04E+01	1,21E+02	3,43E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	kg	1,68E-01	6,13E-04	1,46E-02	1,83E-01	4,90E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Indicator	Unit	Results per 1 ton of coated Pressure pipes									
		A1	A2	A3	Tot. A1-A3	A4	C1	C2	C3	C4	D
Hazardous waste disposed	kg	6,07E-04	1,19E-03	6,21E-01	6,22E-01	3,83E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Nonhazardous waste disposed	kg	5,57E+01	2,50E+01	4,91E+01	1,30E+02	6,64E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	kg	1,38E-01	3,16E-03	2,35E-02	1,65E-01	1,15E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

OUTPUT FLOWS

Indicator	Unit	Results per 1 ton of uncoated Pressure pipes									
		A1	A2	A3	Tot. A1-A3	A4	C1	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	39	39	0	0	0	0	0	0
Materials for energy recovery	kg	0	0	9,4	9,4	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0

Indicator	Unit	Results per 1 ton of coated Pressure pipes									
		A1	A2	A3	Tot. A1-A3	A4	C1	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0,38	0	31	31,38	0	0	0	0	0	0
Materials for energy recovery	kg	0,12	0	5,2	5,32	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0

INFORMATION ON BIOGENIC CARBON CONTENT

Results per 1 ton of uncoated Pressure pipes		
Biogenic carbon content	Unit	Quantity
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	2,13

Results per 1 ton of coated Pressure pipes		
Biogenic carbon content	Unit	Quantity
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	1,61

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



6. Additional information – scenarios

Transport to construction site (A4)

For uncoated Pressure pipes

Parameter	Unit
Vehicle type	Lorry, 16 – 32 metric ton
Load capacity	37 % (ecoinvent 3.6)
Distance	226 – 386 km
Bulk density	7 850 kg/m ³

For coated Pressure pipes

Parameter	Unit
Vehicle type	Lorry, 16 – 32 metric ton
Load capacity	37 % (ecoinvent 3.6)
Distance	530 – 991 km
Bulk density	11 070 kg/m ³

Parameter	Unit
Vehicle type	Ferry
Load capacity	65 % (LIPASTO)
Distance	265 km
Bulk density	11 070 kg/m ³

End-of-life (C)

The pipelines are left to the ground and only minimal share of them are dug up after the service life.

Parameter	Unit
Collection process	Left to ground
Transportation	-
Recovery system	-
Disposal	-

Recycling and reuse (D)

There are no benefits beyond the system boundary as the products are left to the ground and therefore unavailable for energy or material recovery.

7. Differences versus previous versions

There are no previous versions of the EPD.

8. Programme 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-05437
Published	2022-01-13
Revision date	
Valid until	2026-11-12
Product group classification	UN CPC 4128
Reference year for data	2019
Geographical scope	Europe

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

Core product category rules (c-PCR)	CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR)	PCR 2019:14 Construction products. Version 1.11. UN CPC code: 4128
PCR review was conducted by	Claudia A. Peña, International EPD® System.
Independent third-party verification of the declaration and data, according to ISO 14025:2006:	<input type="checkbox"/> EPD Process Certification (internal) <input checked="" type="checkbox"/> EPD Verification (external)
Third party verifier	Hannu Karppi Ramboll Finland Oy
<i>In case of recognised individual verifiers:</i>	
Approved by	The International EPD® System.
Procedure for follow-up of data during EPD validity involves third party verifier	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.

9. References

- General Programme Instructions of the International EPD® System. Version 3.01.
- PCR 2019:14. Construction products. Version 1.11
- Ecobio Oy. 2021. LCA Report – SSAB Europe Oy’s Pressure pipes.

10. Contact information

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