Hot rolled steel plates

Environmental Product Declaration (EPD)
In accordance with ISO 14025 and EN 15804+A1

S-P-01918, version 1.2
UN CPC 412
Programme: The International EPD® System, www.environdec.com
Programme operator: EPD International AB
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Valid until: 2025-03-30

EPD
THE INTERNATIONAL EPD SYSTEM

This application is subject to review and approval by the EPD Programme Operator. Each request will be evaluated on a case-by-case basis.

Application for use of expired EPD

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1. EPD Information and Explanation of the Situation

- EPD number: EPD-IES-0001918:003 (S-P-01918)
- EPD validity date: March 30, 2025
- Requested Extension Period (Until): 2025-09-30
- Planned Submission Date for Updated EPD: 2025-09-01

2. Reason for the Request

Briefly explain the reason the document is expired and any circumstances leading to this. Explain why you are requesting an exception and why it is important.

We are in the process of making a new EPD to replace the expiring one. We are, however, facing delays in the project e.g. due to just recently launched SSAB Zero EPDs and work related to those and the verification will not be completed before the current EPD expires.

We don't expect huge changes in the blast furnace based steel EPD values, since the production process is the same as five years ago. However small decrease in the values is expected due to possibility to use the supplier based iron ore LCA values in our calculations. So from the result perspective there should not be problems to continue with the current EPDs some months more.

We would like to keep the current EPD published on Environdec, and have a written exception to continue using the expired document until September 30, 2025.

3. Decision (by secretariate)

This application is subject to review and approval by the EPD Programme Operator. Each request will be evaluated on a case-by-case basis.

The Secretariate will add comments below on whether the application is approved or not.

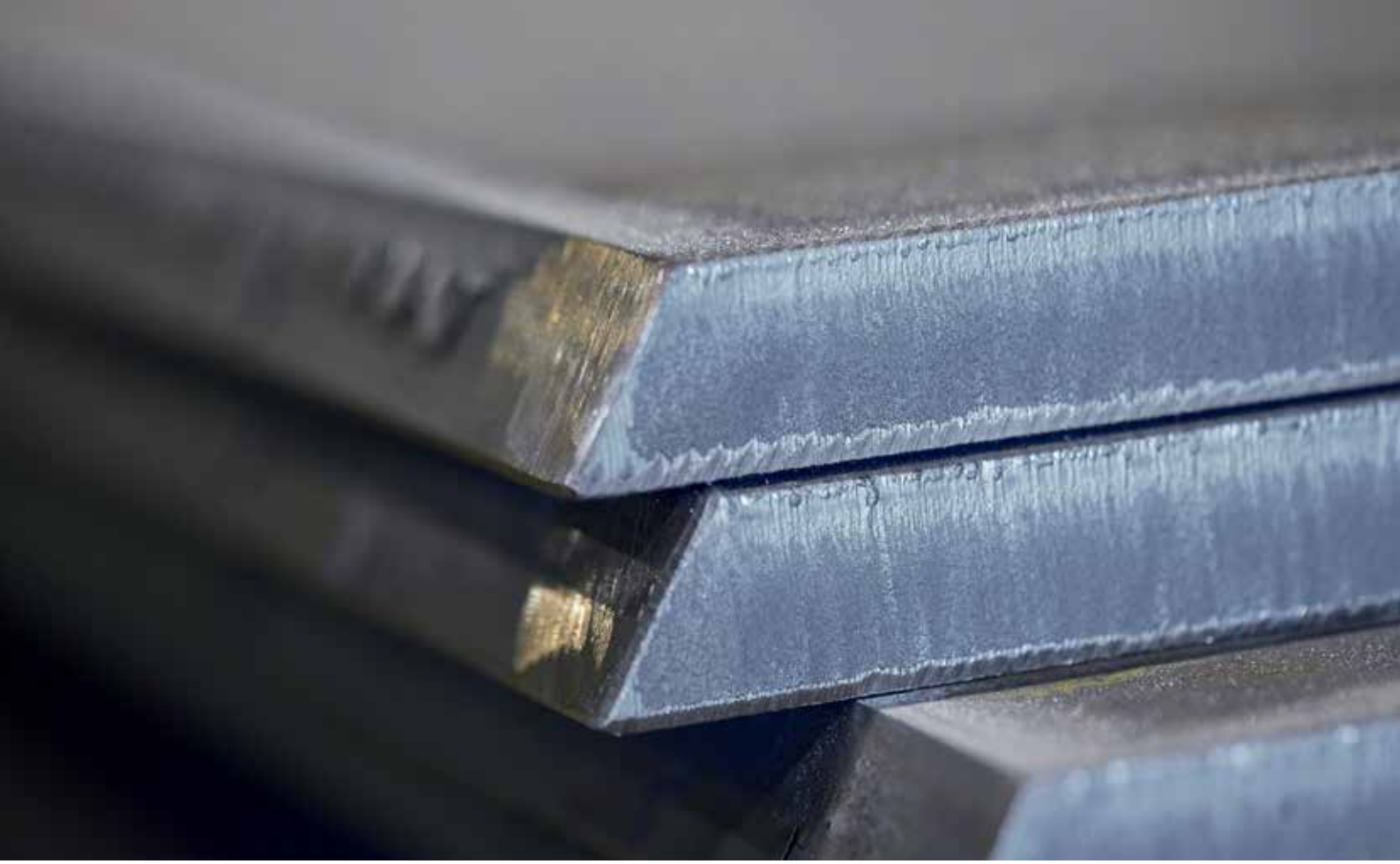
4. Compliance Commitment:

I, the undersigned, confirm that the organisation will comply with all relevant guidelines and regulations during the exception period and that the updated EPD will be submitted by the agreed deadline.

Approved on 2025-02-24 for the extended use of EPD until 2025-09-30.

Sebastiaan Stiller

CEO /VD
The International EPD® System



CONTENT

1. SSAB's vision – a stronger, lighter and more sustainable world

SSAB is a specialized global steel company driven by close relationships with our customers. SSAB develops and markets high performance steels that are either high strength or fit for purpose products designed for better performance and sustainability.

The company is a leading producer in the global market for Advanced High Strength Steels (AHSS) and Quenched & Tempered Steels (Q&T). We serve segments such as, automotive, mining and construction with strip, plate and tube products. SSAB's steels and services help to make end products lighter and better engineered, increasing their strength and lifespan.

SSAB has a cost-efficient and flexible production system. SSAB's production plants in Sweden, Finland and the US have an annual steel production capacity of approximately 8.8 million tonnes. In Sweden and Finland, the integrated blast furnace process is used, whereas in the US, electric arc furnaces are used in a scrap-based production process.

SSAB has been at the forefront of sustainability in many ways. With confidence deriving from our traditions, we now strive to do even more. SSAB's ambition is to largely eliminate carbon dioxide emissions in our own operations in around 2030.

SSAB's environmental management is based on the international environmental management systems standard, ISO 14001. All production facilities within the scope of this Environmental Product Declaration have third-party ISO 14001 certification.

2. SSAB in the circular economy

The term circular economy usually is used to describe a transition from linear business models, in which products are manufactured from raw materials, used and then discarded, to circular business models, where products or parts are repaired, re-used, returned and recycled. A circular economy promotes zero waste in order to create a more sustainable world.

In addition, it supports innovative design to promote recycling, a reduction in the amount of virgin materials used, and encourages the re-use and recycling of all materials. A circular economy can be applied by adopting a lifecycle approach and measuring the social, economic and environmental impact at each stage of a product's lifecycle, including end of life. In summary, steel products promote the core objective of a circular economy because steel can be recycled without weakening its properties.

3. Product

3.1 TECHNICAL INFORMATION AND APPLICATION

SSAB specializes in materials for demanding applications where strength, durability and weight saving are required. Hot rolled steel plates are used in many industries and applications, including the construction industry, shipbuilding, heavy machinery, pressure equipment and other metal structures.

SSAB's comprehensive selection of hot rolled steel plates ranges from standard products to complex customer-specific applications. The hot rolled plate product portfolio includes structural steels (i.e. for use in buildings, machinery and equipment, tanks, containers and bridges), wear-resistant and surface pressure resistant steels (i.e. for use in vehicles, industrial equipment and mining), and shipbuilding and offshore steels.

The steels are often customized to meet national and/or international standards as well as customer-specific or other Original Equipment Manufacturer (OEM) standards. Besides standardized steel grades, SSAB's hot rolled product portfolio also includes products unique to SSAB and which in some cases may be patented.

In addition to standard steel grades, the product portfolio includes SSAB's own brands, which are targeted at different segments and applications. The main brands are listed below:

3.1.1 STRENX®

Structural and cold-forming steels for stronger, lighter, safer, more competitive and more sustainable structures.

3.1.2 HARDOX® AND RAEX®

World-leading abrasion-resistant (AR) steels for extended service life and high productivity in challenging environments.

3.1.3 TOOLOX®

A modern engineering and tool steel of unmatched hardness and toughness.

3.1.4 ARMOX® AND RAMOR®

Armor protection steels with quality and performance you can trust.

3.1.5 SSAB BORON

A range of advanced steel grades for quench and press hardening to improve overall productivity, yield and end-product quality.

3.1.6 SSAB DOMEX®

A wide range of structural and cold-forming steels that deliver excellent cold forming, machining and welding performance.

3.1.7 SSAB LASER®

Structural and cold-forming steels for laser cutting. Designed to improve productivity, yield and end-product quality.

3.1.8 SSAB MULTISTEEL

Covers multiple steel grades and standards bundled into one steel.

3.1.9 SSAB WEATHERING AND COR-TEN®

Corrosion-resistant steels to minimize total lifecycle costs thanks to low or zero maintenance needs. COR-TEN® is a licensed brand and a part of the SSAB Weathering steel family.

Product-specific technical requirements regarding mechanical and other properties arise from national and/or international standards, such as EN 10025 or EN 10225, or customer-specific and/or other OEM standards. SSAB's unique products also have their own specific requirements.

For more detailed information about technical product properties and the product portfolio, please visit www.ssab.com.

3.2 PRODUCT COMPOSITION

Steel is an alloy of mainly iron and carbon, with small amounts of other alloying elements. These elements improve the chemical and physical properties of steel, such as strength, ductility, durability and corrosion resistance. The alloying elements of steel are physically bonded to the steels inherent crystalline structure.

The exact compositions of hot rolled products manufactured by SSAB depend on the requirements of the product. These requirements arise from national and/or international standards, such as EN 10025 or EN 10225, or customer specific and/or other OEM standards. SSAB's unique products also have their own specific requirements.

TABLE 1. EXAMPLE COMPOSITION OF A HOT ROLLED STRUCTURAL STEEL (SSAB MULTISTEEL SN)

Material	Content (%) of total product weight	Ingredient	Content (%, W/W)	CAS number
Structural Steel (SSAB Multisteel SN)	100	Iron (Fe)	> 97	7439-89-6
		Carbon (C)	< 0.18	7440-44-0
		Silicon (Si)	< 0.50	7440-21-3
		Manganese (Mn)	< 1.60	7439-96-5

Remarks
Physical state: solid
Odor: odorless
Color: metallic gray
Boiling point: 2,750°C
Melting point: 1,450 – 1,520°C
Steel density: 7,850 kg/m^3

Table 1 shows as an example the composition of a hot rolled structural steel (SSAB Multisteel SN, excluding packaging materials) produced by SSAB for different applications. This product is a typical example of a hot rolled steel grade used especially in the construction industry. This information is given based on hot rolled steel products made at SSAB's sites in both Sweden and Finland.

The values provided are based on European Standards EN 10219-1, EN 10149-2, EN 10025-2, EN 10025-3, EN 10025-4, EN 10025-6, EN 10130, EN 10268, EN10346 and EN 10169 requirements on maximum concentrations, and included in Table 1 if the maximum levels according to these standards are 0.1% by weight, or higher.

More detailed information about the composition of different steels is available from national and international standards as well as from SSAB's website www.ssab.com.

3.3 COMPLIANCE WITH CHEMICAL LEGISLATION

SSAB actively tracks and anticipates future changes in environmental, safety and chemical legislation and complies with valid EU chemical regulations, such as the REACH Regulation 1907/2006. Communication and cooperation throughout the supply chain plays an important role and SSAB requires full REACH compliance from its subcontractors. SSAB tracks the list of Substances of Very High Concern (SVHC) and other legislative requirements to ensure products meet legal and customer requirements. In addition, SSAB observes and complies with the requests and recommendations of many customers to withdraw products containing hazardous substances in the customer sector.

SSAB's steel products do not contain substances of very high concern (SVHC) as defined and listed in the European Chemicals Agency (ECHA) Candidate List of substances of very high concern for Authorisation, in levels above 0.01% by weight.

Steel contains very small amounts of impurities originating from natural raw materials and not added during the steel production process. The amount of impurities in the steels is minimal and, based on knowledge of the toxicity of these substances and their metallurgical bond in the steel matrix, does not pose a risk to the environment or human health.

For the construction industry, the Environmental Product Declaration will give benefits in rating schemes, such as BREEAM, LEED and Miljöbyggnad. Additionally, there are specific tools for material evaluation, such as BASTA, Byggvarubedömningen and SundaHus, where information from this Environmental Product Declaration is needed.

More information about the chemical composition of hot rolled steel plates can be found at www.ssab.com.

4. Production

4.1 PRODUCTION SITES

Hot rolled steel plates are manufactured at SSAB's production sites in Raahe, Finland and Oxelösund, Sweden. 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.

When scrap steel is used instead of virgin raw materials in steelmaking, the carbon dioxide emissions originating in steel production decrease accordingly. Steelmaking at SSAB uses scrap material from SSAB's own production processes and material sourced on the scrap steel market. Once steel has been made, it can be recycled without weakening its properties.

At SSAB, steelmaking processes have been continuously advanced and improved. As a result, SSAB's blast furnaces today are among the most efficient in the world in terms of minimizing carbon dioxide emissions from steel production.

Most of the energy used in ore-based steel production comes from coal, which is used as a reducing agent in iron-making. The mineral products formed in SSAB's iron and steel production processes and the by-products generated in the coking process are recycled as industrial raw material or material to replace virgin resources. A high percentage of the dust originating in various processes is returned to the process to reduce waste and improve material efficiency.

4.2 LABELING AND PACKAGING

Products are labeled to be easily and permanently identifiable and traceable. Labeling complies with standards EN 10021 and EN 10204. The packaging and protection of our steel products is usually determined when ordering. Steel or plastic straps, wood props, paper or plastic film, corner protection and other accessories supporting packaging are used as appropriate and according to customer requirements.

Prefabricated flat products such as plate components and curved plates are packed and, depending on product size, strapped to an appropriate pallet or packed in crates suitable for that purpose. Also triangular struts are used in the packaging of flat products bent into shape.

This section of the declaration is for information purposes only. The packaging materials are not included in the LCA study.

More information about the labeling and packaging can be found at www.ssab.com.

4.3 SOURCING AND TRANSPORTATION

The general terms and conditions of all new or renewed raw material sourcing contracts require compliance with SSAB's Supplier Sustainability Policy. Ethical values, environmental concerns and energy efficiency are considered when choosing suppliers. As regards the main raw materials used in steel production, iron ore pellets are sourced from Sweden, metallurgical coal from North America and Australia, metallurgical coke from Japan, China and Poland, limestone from Sweden, Norway, France and Spain, and scrap from Sweden and Finland. Alloys are sourced from multiple origins including Brazil, China, South Korea, Chile and the US. The company's own logistics unit is responsible for most of SSAB's transportation of raw materials and products. Finished products are transported by sea, road or rail.

SSAB's environmental objectives in respect of logistics are managed through a certified environmental management system. The aim is to increase the share of logistics contracts with partners who have signed up for energy efficiency agreements in the logistics and transport sector. Around 85 % of SSAB's land transportations per tonne of products are carried by a partner signatory to energy efficiency agreements. Logistics companies outside an energy efficiency agreement are regularly encouraged to sign up to one. SSAB's international partners have certified environmental management systems. Logistics aims to optimize transport and maximize payloads and to combine transport as efficiently as possible.

5. Recycling and waste processing

Steel is a fully recyclable material and scrap steel has a strong market position: steel recovered from structures and end products at the end of their lifecycle is efficiently recycled and re-used.

No hazardous waste is formed from end products and steel does not harm the environment. According to the European Waste Catalogue, the waste code for steel products manufactured by SSAB after their useful life is 17 04 05 (iron and steel). All packaging materials for steel products can be recycled.

6. Information about safe use

Steel poses no hazards to the environment in the forms supplied. Some grades of steel contain alloying elements such as manganese, chromium, niobium, vanadium, titanium, nickel, copper and silicon. None of these substances is released under normal or reasonably foreseeable conditions of use.

Dust and vapors may form when steel is melted, welded, cut or ground (or heated to very high temperatures). Long-term exposure to high dust and vapor concentrations may affect the health, especially the lungs. The composition of dust and vapor depends on the steel grade and methods employed.

Welding must be left to trained people. Personal protective equipment must be used and sufficient ventilation must be ensured in compliance with safety legislation. Instructions on the welding of metals and metal alloys can be found on the website of, for example, the European Steel Association www.eurofer.org.

The use and handling of steel does not endanger people or the environment and there are no specific exposure limits in place for this reason. Neither have any first aid measures, measures in the event of fire or unintentional emission, or measures as regards the handling and storage of steel been specified.

Normal precautions should be taken to avoid physical injuries caused mainly by the heavy weight or sharp edges of a product. Personal protective equipment such as special gloves and eye protection must be worn.

Hot rolled steel is not classified as dangerous under the EU's chemical regulation (REACH) and so no Safety Data Sheet or hazardous packaging, marking or transport rules and regulations are required.

6.1 SAFETY

- Always wear gloves and protective clothing when handling steel products.
- Be careful of sharp edges and corners.
- Always use official lifting equipment when moving steel products.
- Never use binding straps to lift a product.
- Straps under tension may cause injury when cut and the outer ring of a coil may rebound outwards.
- Never go under steel products when they are being moved.
- Make sure the securing straps are sufficiently strong and firmly attached.
- Always follow the industrial safety provisions in force and find out whether the installation site is subject to any particular safety requirements before beginning installation work.

7. LCA information

- **Functional unit / declared unit:** 1 tonne (1,000 kg) of hot rolled steel plates.
- **Reference service life:** Not applicable.
- **The LCA is based on data from the following SSAB production sites:**
  - SSAB EMEA AB, Oxelösund, Sweden
  - SSAB Europe Oy, Raahe, Finland
- **Data quality and representativeness:** Production data have been collected by SSAB directly from the production sites and are average values for the year 2017. The data have been measured and verified internally. The data are assumed to be the most relevant according to current conditions and production practices.
- **Database(s) and LCA software used:** The World Steel Association's 5th steel LCI dataset released in December 2018, the GaBi LCA Databases 2019 (SP39), the Gabi LCA Software (GaBi version 9).
- **Description of system boundaries:** Cradle-to-gate with options.
- **Cut-off:** The packaging material inflow is not included in the LCA. The packaging material represents less than 1% of the total inflow by mass and is therefore well below the limits given by the cut-off rules, stated in EN 15804, as well as the relevant PCR document for this EPD.
- **Allocation:** By-products such as blast furnace slag are used as input material in a number of industries, for example in road construction and as a substitute for cement. This study has used a conservative approach and considered all the environmental burdens associated with the production of the steel products and by-products as belonging to the production of the steel.
- **End-of-Life Scenario:** A recycling rate of 95 % has been assumed for the steel product. That is to be seen as the proportion of the material in the product that will be recycled (or re-used) in a subsequent system. The recycling rate referring to the output of the recycling plant and all the material losses through the lifecycle have been taken into account, including material losses in the collection, sorting and recycling (or re-use) processes up to the point of final substitution. The scenario results in 5 % material losses in total, considered as landfilling steel scrap.
- **Net-scrap calculation:** To some extent SSAB uses external scrap in the steel production. Therefore, this amount of scrap has been deducted from the stated recycling rate. This is done to calculate the amount of net-scrap to be credited in Module D. This is the amount of steel scrap available for the next lifecycle. The re-circulation of internal scrap has not been considered in this calculation, since it represents a closed loop inside the system boundary for the LCA.

8. Scope of declaration

The scope of this declaration is for 1 tonne of hot rolled steel plate from cradle to the mill gate, including end-of-life processing and recycling: Modules A1 – A3, C3 – C4 and D (according to EN 15804). Modules A4 – A5, B1 – B7 and C1 – C2 have not been included, due to the inability to predict how the material will be used following manufacture.

The system boundary applied in this study extends from Module A1, the mining of raw materials, such as iron ore and coal; Module A2, transport to and within the manufacturing site; Module A3, coke, iron and steel manufacture; ancillary service operations; hot rolling of steel products and packaging for dispatch to customers at the exit gate of the manufacturing site.

The system boundary also includes manufacture of other required input materials, transport between processing operations, the production of external services such as electricity, natural gas and water, and the production of by-products within the steelmaking process. Wastes and emissions to air, land and water are also included, as are Modules C3 scrap processing, C4 disposal to landfill and D recovery for recycling.

Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Re-use-, recovery-, recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X

X=Module declared.
MND=Module not declared (such a declaration shall not be regarded as an indicator of a zero result).

9. Environmental performance

For SSAB, the Nordic production system should be considered as one entity. A customer order is normally not dedicated to a specific production location, since the technical specification (data sheet) is used to identify the product.

Although there is a spread larger than 10 % for some indicators, it would not be meaningful to report these at site level, since the actual customer business is not conducted at site level.

In the case of hot rolled plate, mainly the indicators ADP, ODP and POCP differ, which can be explained by differences in the product mix, rather than the performance of the sites per se. In particular this refers to the alloying content of the products, and the upstream impact thereof.

This EPD was published in 2020 and updated in 2023. In 2020, the PCR for construction products according to EN15804+A1 was applied. In the 2023 update, the very same version of the PCR is still applied, and the only change made is the addition of results using the EN15804+A2 versions of indicators.

Another update in 2023 is to display results based on supplier-specific data for iron ore pellets from LKAB (published in 2017), while the EPD published in 2020 was based on generic database data for iron ore pellets production. This was only done for fossil climate change.

The results have been divided into three sub-sections:

- Results according to EN15804+A1 (as in the original EPD published in 2020)
- Additional results using EN15804+A2 indicators (updated in 2023)
- Additional results for fossil climate change based on supplier-specific data for iron ore pellets (EN15804+A2)

Tables 2a – 2c show the results of the lifecycle assessment.

9.1 RESULTS ACCORDING TO EN 15804+A1

TABLE 2A. POTENTIAL ENVIRONMENTAL IMPACT PER 1,000 KG OF HOT ROLLED STEEL PLATES (EN15804+A1 VERSIONS OF INDICATORS)

Results per declared unit: 1 tonne of steel (Hot rolled plate)						
Parameter	Acronyms	Unit	Total A1-A3	C3	C4	D
Global warming potential	GWP	kg CO_2 eq	2.71E+03	2.49E+00	7.44E-01	-1.48E+03
Eutrophication potential	EP	kg PO_4 eq	6.30E-01	4.22E-03	5.00E-04	-2.17E-01
Acidification potential	AP	kg SO_2 eq	6.25E+00	1.76E-02	4.42E-03	-2.93E+00
Photo-oxidant formation potential	POCP	kg ethene eq	6.51E-01	1.95E-03	3.42E-04	-6.86E-01
Ozone layer depletion potential	ODP	kg CFC-11 eq	1.18E-09	8.13E-15	4.32E-15	8.29E-06
Abiotic depletion potential: fossil	ADP-fossil	MJ, net calorific value	2.66E+04	4.83E+01	1.04E+01	-1.44E+04
Abiotic depletion potential: elements	ADP-elements	kg Sb eq	2.11E-02	2.80E-06	7.41E-08	-4.56E-03

TABLE 2B. USE OF RESOUCES PER 1,000 KG OF HOT ROLLED STEEL PLATES (EN15804+A1 VERSIONS OF INDICATORS)

Results per declared unit: 1 tonne of steel (Hot rolled plate)						
Parameter	Acronyms	Unit	Total A1-A3	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	PERE	MJ, net calorific value	1.85E+03	3.56E+00	1.37E+00	9.56E+02
Use of renewable primary energy resources used as raw materials	PERM	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	PERT	MJ, net calorific value	1.85E+03	3.56E+00	1.37E+00	9.56E+02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	PENRE	MJ, net calorific value	2.80E+04	5.01E+01	1.08E+01	-1.39E+04
Use of non-renewable primary energy resources used as raw materials	PENRM	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	PENRT	MJ, net calorific value	2.80E+04	5.01E+01	1.08E+01	-1.39E+04
Use of secondary material	SM	kg	2.57E+01	-	-	-
Use of renewable secondary fuels	RSF	MJ, net calorific value	1.35E-17	0.00E+00	0.00E+00	0.00E+00
Use of non renewable secondary fuels	NRSF	MJ, net calorific value	1.58E-16	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	FW	m^3	3.18E+00	1.49E-02	2.72E-03	1.99E+00

TABLE 2C. WASTE PER 1,000 KG OF HOT ROLLED STEEL PLATES (EN15804+A1 VERSIONS OF INDICATORS)

Results per declared unit: 1 tonne of steel (Hot rolled plate)						
Parameter	Acronyms	Unit	Total A1-A3	C3	C4	D
Hazardous waste disposed	HWD	kg	6.08E-01	1.57E-06	1.84E-07	-9.72E-04
Non-hazardous waste disposed	NHWD	kg	8.23E+01	1.02E-02	5.01E+01	1.60E+02
Radioactive waste disposed	RWD	kg	5.53E-01	0.00E+00	0.00E+00	0.00E+00

9.2 ADDITIONAL RESULTS USING EN 15804+A2 INDICATORS

These results are based on the EN 15804+A1 LCA modelling method and calculated for the EN 15804+A2 indicators. The characterization factors applied are those recommended in the framework of the Environmental Footprint (EF), version 3.0. The following indicators have not been assessed; Global warming potential, excluding biogenic carbon (GWP-GHG) and the output flows category, i.e, Components for re-use (CRU), Materials for recycling (MFR), Material for energy recovery (MER), Exported electrical energy (EEE) and Exported thermal energy (EET).

TABLE 3A. POTENTIAL ENVIRONMENTAL IMPACT PER 1,000 KG OF HOT ROLLED STEEL PLATES (EN15804+A2 VERSIONS OF INDICATORS)

Results per declared unit: 1 tonne of steel (Hot rolled plate)						
Parameter	Acronyms	Unit	Total A1-A3	C3	C4	D
Climate Change - total	GWP-total	kg CO_2 eq	2.78E+03	2.62E+00	8.04E-01	-1.55E+03
Climate Change - fossil	GWP-fossil	kg CO_2 eq	2.78E+03	2.58E+00	7.99E-01	-1.55E+03
Climate Change - biogenic	GWP-biogenic	kg CO_2 eq	1.99E-01	4.72E-03	1.21E-03	4.11E-01
Climate Change - land use and land use change	GWP-luluc	kg CO_2 eq	6.38E-01	3.25E-02	3.87E-03	-2.67E-02
Ozone depletion	ODP	kg CFC-11 eq	6.39E-10	6.17E-15	3.28E-15	9.39E-06
Acidification	AP	mole H+ eq	7.70E+00	2.54E-02	5.55E-03	-3.51E+00
Eutrophication aquatic freshwater	EP-freshwater	kg P eq	1.79E-03	1.12E-05	1.81E-06	-8.61E-04
Eutrophication aquatic marine	EP-marine	kg N eq	1.82E+00	1.22E-02	1.42E-03	-6.89E-01
Eutrophication terrestrial	EP-terrestrial	mole N eq	1.98E+01	1.34E-01	1.56E-02	-6.97E+00
Photochemical ozone formation	POCP	kg NMVOC eq	5.57E+00	3.56E-02	4.31E-03	-2.72E+00
Depletion of abiotic resources - minerals and metals	ADP-minerals & metals (1)	kg Sb eq	2.12E-02	2.80E-06	7.32E-08	-4.55E-03
Depletion of abiotic resources - fossil fuels	ADP-fossil	MJ	2.79E+04	5.01E+01	1.08E+01	-1.39E+04
Water use	WDP	m^3	1.20E+02	5.13E-01	8.37E-02	6.24E+01

(1) 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.

TABLE 3B. USE OF RESOUCES PER 1,000 KG OF HOT ROLLED STEEL PLATES (EN15804+A2 VERSIONS OF INDICATORS)

Results per declared unit: 1 tonne of steel (Hot rolled plate)						
Parameter	Acronyms	Unit	Total A1-A3	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	PERE	MJ	1.85E+03	3.56E+00	1.37E+00	9.56E+02
Use of renewable primary energy resources used as raw materials	PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	PERT	MJ	1.85E+03	3.56E+00	1.37E+00	9.56E+02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	PENRE	MJ	2.80E+04	5.01E+01	1.08E+01	-1.39E+04
Use of non-renewable primary energy resources used as raw materials	PENRM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	PENRT	MJ	2.80E+04	5.01E+01	1.08E+01	-1.39E+04
Use of secondary material	SM	kg	2.57E+01	-	-	-
Use of renewable secondary fuels	RSF	MJ	1.35E-17	0.00E+00	0.00E+00	0.00E+00
Use of non renewable secondary fuels	NRSF	MJ	1.58E-16	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	FW	m^3	3.18E+00	1.49E-02	2.72E-03	1.99E+00

TABLE 3C. WASTE PER 1,000 KG OF HOT ROLLED STEEL PLATES (EN15804+A2 VERSIONS OF INDICATORS)

Results per declared unit: 1 tonne of steel (Hot rolled plate)						
Parameter	Acronyms	Unit	Total A1-A3	C3	C4	D
Hazardous waste disposed	HWD	kg	6.08E-01	1.57E-06	1.84E-07	-9.72E-04
Non-hazardous waste disposed	NHWD	kg	8.23E+01	1.02E-02	5.01E+01	1.60E+02
Radioactive waste disposed	RWD	kg	5.53E-01	0.00E+00	0.00E+00	0.00E+00

9.3 ADDITIONAL RESULTS FOR FOSSIL CLIMATE CHANGE BASED ON SUPPLIER-SPECIFIC DATA

GWP-fossil was the only indicator available from the iron ore pellets supplier.

TABLE 4A. POTENTIAL ENVIRONMENTAL IMPACT PER 1,000 KG OF HOT ROLLED STEEL PLATES – BASED ON SUPPLIER-SPECIFIC DATA FOR PRODUCTION OF IRON ORE PELLETS FROM LKAB (EN15804+A2 VERSIONS OF INDICATORS)

Results per declared unit: 1 tonne of steel (Hot rolled plate) – LKAB data for iron ore pellets						
Parameter	Acronyms	Unit	Total A1-A3	C3	C4	D
Climate Change - fossil	GWP-fossil	kg CO_2 eq	2.58E+03	2.58E+00	7.99E-01	-1.55E+03

10. Additional information

Steel is 100 % recyclable and its unique properties mean it can be recycled without loss of properties or performance.

11. Mandatory statements

- The EPD for construction products may not be comparable if they do not comply with EN 15804.
- EPDs within the same product category but from different programs or utilizing different PCRs may not be comparable.

12. Program-related information and verification

Program	The International EPD® System. EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden. www.environdec.com
EPD registration number	S-P-01918
Published	2020-03-31
Revised	2023-09-25
Valid until	2025-03-30
Product group classification	UN CPC 412
Reference year for data	2017
Geographical scope	Global

Core product category rules (c-PCR)	CEN standard EN 15804+A1 served as the core PCR.
Product category rules (PCR)	PCR 2012:01 Construction products and Construction services. Version 2.3, 2018-11-15.
PCR review was conducted by	The Technical Committee of the International EPD® System. Chair: Massimo Marino. Contact via info@environdec.com
Independent verification of the declaration and data, according to ISO 14025:2006:	☐ EPD Process Certification (internal) ◉ EPD Verification (external)
Third party verifier	Carl-Otto Nevén NEVÉN Miljökonsult David Althoff Palm (updates in 2023) Dalemarken AB
Accredited or approved by	The International EPD® System.

12.1 IMPLEMENTED CHANGES TO REVISION

Updated 2023-06-28 with additional results using EN 15804+A2 indicators. Furthermore, additional results for fossil climate change (GWP-fossil) based on supplier-specific data has been added. And, for the parameter Use of secondary material (SM), the values are now given with greater accuracy (two decimal places).

Updated 2023-09-25 with editorial changes to where the main raw materials are sourced from.

13. References

- ISO 14025:2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures.
- General Programme Instructions of the International EPD® System. Version 3.01.
- EN 15804:2012+A1:2013 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.
- PCR 2012:01. Construction Products and Construction Services. Version 2.3, 2018-11-15.
- World Steel Association Life Cycle Inventory study report, 2018 data release. This study report corresponds to the steel LCI data released in December 2018 for 17 products. This is the 5th worldsteel LCI study and has been carried out in accordance with the worldsteel LCI methodology report.
- The GaBi LCA Databases 2019 (SP39).
- The GaBi LCA Software (GaBi version 9).
- LCA methodology report – SSAB steel products EPDs, as the basis for the publication of EPDs within The International EPD® System, IVL Report U 6256, 2020.
- Supplementary LCA methodology report, to the IVL Report U 6256, 2023.

14. Contact information

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SSAB is a Nordic and US-based steel company. SSAB offers value added products and services developed in close cooperation with its customers to create a stronger, lighter and more sustainable world. SSAB has employees in over 50 countries. SSAB has production facilities in Sweden, Finland and the US. SSAB is listed on the Nasdaq OMX Nordic Exchange in Stockholm and has a secondary listing on the Nasdaq OMX in Helsinki.

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