Steel Rails and Sections

Environmental Product Declaration

Owner of the Declaration: British Steel Limited, Brigg Road, Scunthorpe, North Lincolnshire, DN16 1BP, United Kingdom
Programme Operator: Tata Steel UK Limited, 18 Grosvenor Place, London, SW1X 7HS, United Kingdom

CONTENTS

British Steel Sections and Rails
Environmental Product Declaration
(in accordance with ISO 14025 and EN 15804)

This EPD is representative and valid for the specified (named) product

Declaration Number: EPD-TS-2026-027
Date of Issue: 31st July 2026
Valid until: 30th July 2031

Owner of the Declaration: British Steel Limited
Programme Operator: Tata Steel UK Limited

The CEN standard EN 15804:2012+A2:2019 serves as the core Product Category Rules (PCR) supported by Tata Steel's EN 15804 verified EPD PCR documents

Independent verification of the declaration and data, according to ISO 14025

Internal ☐ External ☒

Author of the Life Cycle Assessment: Tata Steel UK
Third party verifier: Chris Foster, Eugeos Ltd.

1 General information

Owner of EPD	British Steel Limited
Product	Steel rails and sections (including semi-finished long products)
Manufacturer	British Steel Limited
Manufacturing sites	Scunthorpe and Teesside
Product applications	Steel sections used in construction and infrastructure, steel rails for mainline and urban transport railway networks, and semi-finished long products for subsequent downstream re-rolling and forging
Declared unit	1 tonne of steel sections and rails
Date of issue	31st July 2026
Valid until	30th July 2031

This Environmental Product Declaration (EPD) is an average EPD for steel sections and rails manufactured by British Steel in the UK. The environmental indicators are for products manufactured at Scunthorpe and Teesside with feedstock supplied from Scunthorpe as well as some external feedstock supplied to Teesside.

The information in the Environmental Product Declaration is based on production data from 2025.

EN 15804 serves as the core PCR, supported by Tata Steel's EN 15804 verified EPD programme Product Category Rules documents, and this declaration has been independently verified according to ISO 14025 [1,2,3,4,5,6,7].

Third party verifier

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2 Product information

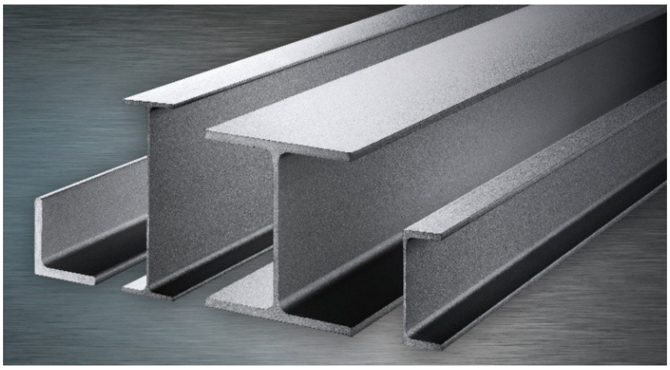
2.1 Product description

Steel sections are supplied in the as-rolled or thermomechanical rolled condition from British Steel rolling mills in Scunthorpe and Teesside. These hot rolled sections can also be supplied in the shot-blasted or shot-blasted and primed conditions. They include universal beams and columns, equal and un-equal angles and parallel flange channels in a range of external dimensions from less than 100mm to over 1000mm, and product weights from less than 20kg/m to over 1000kg/m. Mechanical properties of these products range from those for mild steel grades through to high strength steel grade variants.

Steel rails are supplied in the as-rolled condition from a British Steel rolling mill in Scunthorpe. These rails can also be supplied in the Zinoco® coated condition. Numerous different rail profiles are produced, with section weights from 39kg/m to just over 75kg/m, for both rail wheel support and guidance, and third rail electrification requirements.

Figure 1 shows British Steel sections.

Figure 1 Steel sections



2.2 Manufacturing

The manufacturing sites included in the EPD are listed in Table 1 below.

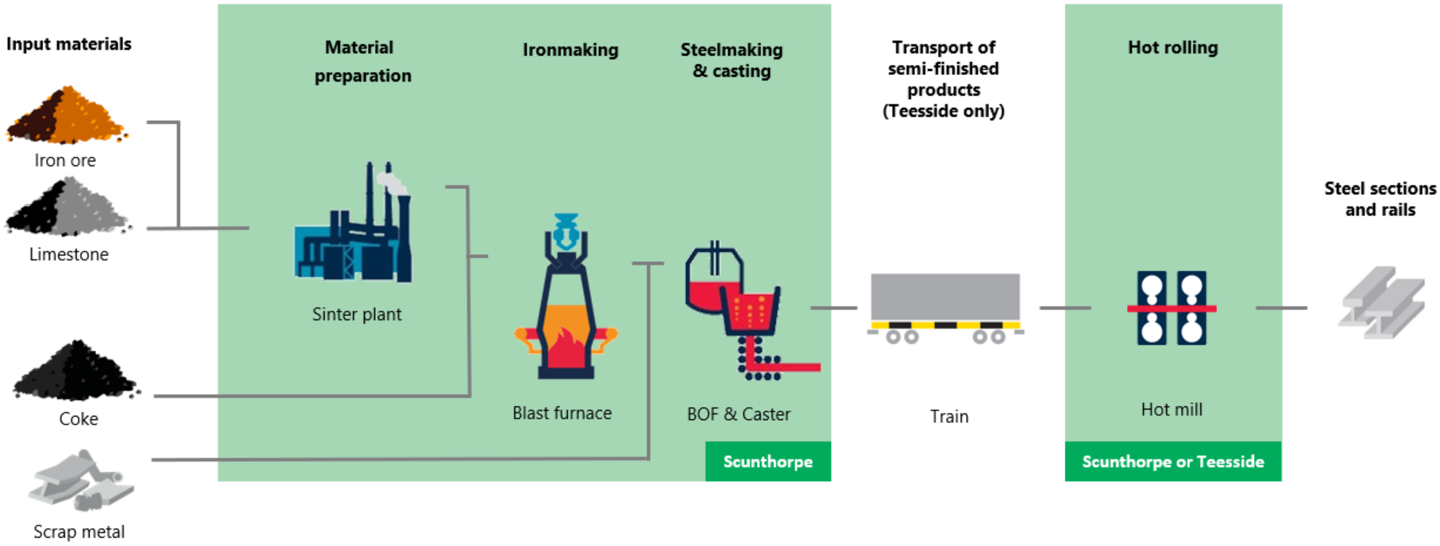
Table 1 Participating sites

Site name	Product	Manufacturer	Country
Scunthorpe	Semi-finished products	British Steel	UK
Scunthorpe	Sections and rails	British Steel	UK
Teesside	Sections	British Steel	UK

The steel manufacturing process at British Steel begins at Scunthorpe integrated steelworks where sinter is produced from iron ore and limestone, which together with coke from coal, is then reduced in a blast furnace to produce liquid iron. Steel scrap is added to the liquid iron and oxygen is blown through the mixture to convert it into liquid steel in the basic oxygen furnace. Gases evolved from these processes are recycled and used to power reheating furnaces and also to generate electricity. Alloying elements are added to the liquid steel before it is continuously cast into rectangular sections. Discrete blooms, billets and slabs are cut from the continuously cast solid steel strands, and these semi-finished products are subsequently reheated and hot rolled in to a section or rail to make the final product. Some of the semi-finished products are transported from Scunthorpe to Teesside by rail, and are then reheated and hot rolled in a section mill. Sections may also be produced at Teesside from externally supplied substrate. The process is shown in Figure 2.

Process data for the manufacture of steel long products at Scunthorpe and Teesside was gathered as part of the latest The Worldsteel Association data collection. This was done for the 2025 calendar year for both sites.

Figure 2 Process overview from raw materials to steel sections and rails



2.3 Technical data and specifications

The general specifications of the steel sections are shown in Table 2.

2.4 Packaging

Sections and rail products are supplied singly or in tie wired product bundles to meet customer order requirements, and packaging is an absolute minimum. Steel is delivered to customer premises or directly to site, in lengths ranging from less than 6m to individual rails 216m long. Individual bars or bundles are separated by re-usable timbers or bespoke multi-use spacers, and loads are securely fixed to the railway wagon or truck by re-usable strapping. If required, loads can be sheeted although this is generally not necessary for steel rails and sections.

Mass of packaging per tonne of product supplied is shown below.

Steel band: 5.59E-01 kg/t

Timber: 7.14E-02 kg/t

2.5 Reference service life

A reference service life for steel rails and sections is not declared because the construction or infrastructure application of these products is not part of this LCA study. To determine the full service life of steel rails and sections, all factors would need to be included, such as details of the final product application, and its location and environment.

Steel sections are supplied in a vast range of dimension and product property combinations, to allow maximum design efficiencies to be achieved. Construction and infrastructure projects range from re-usable temporary installations, to permanent structures designed to be serviceable for many decades.

Rail steel grades have been developed to resist the key degradation mechanisms of wear, fatigue and corrosion, and to facilitate simple on-site repairs to provide the maximum possible safe in-service life. Typically, the life of installed rail ranges from many years to decades, with rails often cascaded to lower category track through their serviceable life, however this additional aspect is not considered in the end of life calculations within this EPD.

Table 2 Technical specification of the steel products

		British Steel sections and rails
Scope/Product	**Attributes**	**Applicable standards and certifications (typical)**
Manufacturing facilities	Quality systems, factory production control, material sourcing and supply chain	ISO 9001 [8], NHSS 3B [9], CPR [10], ISO 14001 [11], BES 6001 [12], REACH [13], RoHS [14]
Sections	Dimensions	EN 10365 [15], ASTM A6 [16]
	Mechanical properties	EN 10025 [17], EN 10225 [18], ASTM A572 [19], ASTM A992 [20]
Rails	Dimensions	ISO 5003 [21], ISO 22055 [22], EN 13674 [23], EN 14811 [24], BS 11 [25], BS 500 [26], BS 7865[27]
	Mechanical properties	Customer and network specific rail standards

2.6 Biogenic carbon content

There are no materials containing biogenic carbon in the steel sections and rails. Timber is used to package the products and comprises a measurable mass of the total packaging as shown in Table 3 below.

Table 3 Biogenic carbon content at the factory gate

	Steel sections and rails
Biogenic carbon content (product) (kg)	0
Biogenic carbon content (packaging) (kg)	0.036

Note: 1kg biogenic carbon is equivalent to 44/12 kg of CO_2

3 LCA methodology

3.1 Declared unit

The unit being declared is 1 tonne of steel sections and rails.

3.2 Scope

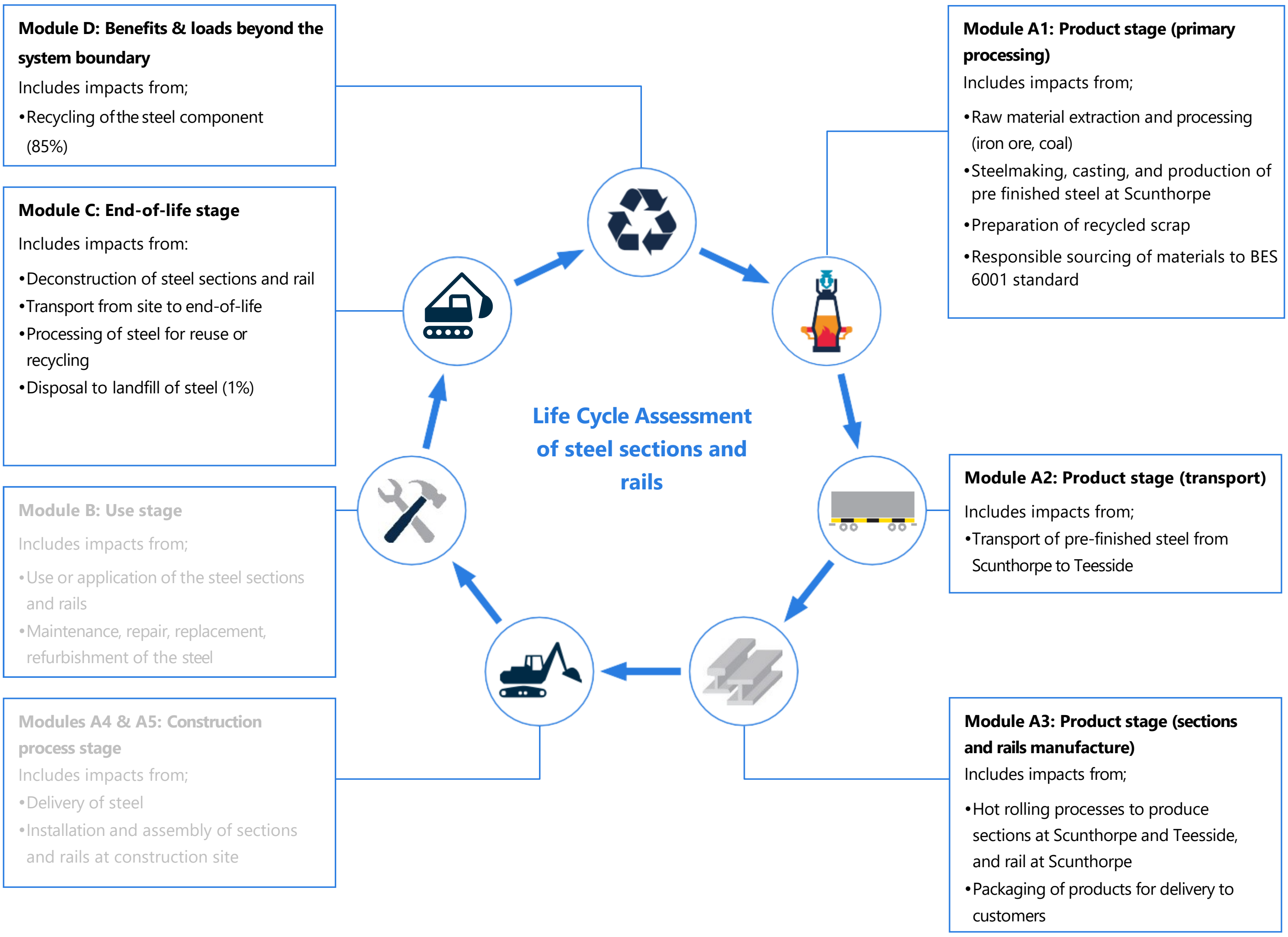
This EPD can be regarded as Cradle-to-Gate (with options) and the modules considered in the LCA are;

A1-A3: Production stage (Raw material supply, transport to production site, manufacturing)
C1-C4: End-of-life (Deconstruction, transport, processing for recycling and disposal)
D: Reuse, recycling and recovery

3.3 Cut-off criteria

All information from the data collection process has been considered, covering all used and registered materials, and all fuel and energy consumption. On-site emissions were measured, and those emissions have been considered. Data for all relevant sites were thoroughly checked and also cross-checked with one another to identify potential data gaps. No processes, materials or emissions that are known to make a significant contribution to the environmental impact of the sections and rails have been omitted. On this basis, there is no evidence to suggest that any input or outputs contributing more than 1% to the overall mass or energy of the system, or that are environmentally significant, have been omitted. It is estimated that the sum of any excluded flows contributes less than 5% to the impact assessment categories. The manufacturing of required machinery and other infrastructure is not considered in the LCA.

Figure 3 Life Cycle Assessment of steel sections and rails



3.4 Background data

For life cycle modelling of the steel sections and rails, the Sphera LCA for Experts Software System for Life Cycle Engineering (formerly GaBi) is used [28]. The LCAfE database contains consistent and documented datasets which can be viewed in the online Managed LCA Content (MLC) documentation [29].

Where possible, specific data derived from British Steel production processes were the first choice to use where available.

To ensure comparability of results in the LCA, the basic data of the Sphera MLC were used for energy, transportation and auxiliary materials.

3.5 Data quality

The data from British Steel production processes are from 2025, and the technologies on which these processes were based during that period, are those used at the date of publication of this EPD. All relevant background datasets are taken from the Sphera MLC, and the last revision of all but one of these data sets took place less than 10 years ago. However, the contribution to impacts of the older dataset is of low significance, and therefore, the study is considered to be based on good quality data.

3.6 Allocation

To align with the requirements of EN 15804, a methodology is applied to assign impacts to the production of slag and hot metal from the blast furnace (co-products from steel manufacture), that was developed by the World Steel Association and EUROFER [30]. This methodology is based on physical and chemical partitioning of the manufacturing process, and therefore avoids the need to use allocation methods, which are based on relationships such as mass or economic value. It takes account of the manner in which changes in inputs and outputs affect the production of co-products and also takes account of material flows that carry specific inherent properties. This method is deemed to provide the most representative method to account for the production of blast furnace slag as a co-product.

Economic allocation was considered, as slag is designated as a low value co-product under EN 15804. However, as neither hot metal nor slag are tradable products upon leaving the blast furnace, economic allocation would most likely be based on estimates. Similarly BOF slag must undergo processing before being used as a clinker or cement substitute. The World Steel Association and EUROFER also highlight that companies purchasing and processing slag work on long term contracts which do not follow regular market dynamics of supply and demand.

Process gases arise from the production of the semi-finished products at Scunthorpe and are accounted for using the system expansion method when there are process gas imbalances within the sections and rails production route boundary. This method is also referenced in the same EUROFER document and the impacts of co-product allocation, during manufacture, are accounted for in the product stage (Module A1).

End-of-life assumptions for recovered steel and steel recycling are accounted for as per the current methodology from the World Steel Association 2017 Life Cycle Assessment methodology report [31]. A net scrap approach is used to avoid double accounting, and the net impacts are reported as benefits and loads beyond the system boundary (Module D).

3.7 Additional technical information

The main scenario assumptions used in the LCA are detailed below in Table 4. The end-of-life percentages are based upon a Tata Steel/ EUROFER recycling and reuse survey of UK demolition contractors carried out in 2014[32].

For all indicators the characterisation factors from the European Commission-Joint Research Centre are applied, identified by the name EN 15804, and based upon the Environmental Footprint Reference Package 3.1[33]. In LCAfE, the corresponding impact assessment is used, denoted by EN 15804 +A2.

3.8 Comparability

Care must be taken when comparing EPDs from different sources. EPDs may not be comparable if they do not have the same functional unit or scope (for example, whether they include installation allowances), or if they do not follow the same standard such as EN 15804. The use of different generic data sets for upstream or downstream processes that form part of the product system may also mean that EPDs are not comparable.

Comparisons should ideally be integrated into a whole assessment, in order to capture any differences in other aspects of the design that may result from specifying different products. For example, a more durable product would require less maintenance and reduce the number of replacements and associated impacts over its life cycle.

Table 4 Main scenario assumptions

Module	Scenario assumptions
A1 to A3 – Product stage	Manufacturing data from British Steel sites at Scunthorpe, and Teesside are used.
A2 – Transport to the manufacturing site	The semi-finished products are transported to Teesside by rail from Scunthorpe. A utilisation factor of 45% was assumed to allow for empty returns and the distances travelled are 196km to Teesside (by rail).
C1 – Deconstruction & demolition	Energy consumption estimated based upon published data (Germany)[34] for the dismantling of steel constructions.
C2 – Transport for recycling, reuse, and disposal	A transport distance of 100km to landfill or to a recycling site is assumed, while a distance of 250km is assumed for reuse. Transport is by road on a 25 tonne load capacity truck with 40% utilisation to account for empty returns.
C3 – Waste processing for reuse, recovery and/or recycling	The sections and rails are processed for recycling.
C4 - Disposal	At end-of-life, 1% of the steel is disposed to landfill, in accordance with the findings of an NFDC survey.
D – Reuse, recycling, and energy recovery	At end-of-life, 92% of the steel is recycled and 7% is reused, in accordance with the findings of an NFDC survey.

Please note that in the LCAfE software, an empty return journey is accounted for by halving the load capacity utilisation of the outbound journey.

4 Results of the LCA

Description of the system boundary

Product stage			Construction stage		Use stage							End-of-life stage				Benefits and loads beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse Recovery Recycling
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	X	X	X	X	X

X = Included in LCA; MND = module not declared

Environmental impact:

1 tonne of steel section and rails

Parameter	Unit	A1 – A3	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	2.94E+03	7.04E+01	1.29E+01	1.09E+01	1.50E-01	-1.74E+03
GWP-fossil	kg CO_2 eq	2.94E+03	7.03E+01	1.29E+01	1.10E+01	1.50E-01	-1.75E+03
GWP-biogenic	kg CO_2 eq	1.24E-01	4.17E-02	-5.26E-02	-1.13E-01	-2.25E-04	9.07E+00
GWP-luluc	kg CO_2 eq	7.70E-01	2.01E-03	6.96E-02	5.28E-02	2.72E-04	-2.59E-01
ODP	kg CFC11 eq	1.16E-08	1.10E-11	5.93E-12	2.53E-10	7.44E-13	1.26E-09
AP	mol H^+ eq	7.85E+00	1.06E-01	2.01E-02	3.59E-02	1.08E-03	-4.33E+00
EP-freshwater	kg P eq	7.05E-04	1.47E-05	7.43E-06	3.86E-05	1.90E-07	-4.09E-04
EP-marine	kg N eq	1.73E+00	4.39E-02	8.31E-03	6.65E-03	2.81E-04	-7.28E-01
EP-terrestrial	mol N eq	1.91E+01	4.83E-01	9.34E-02	7.12E-02	3.08E-03	-6.78E+00
POCP	kg NMVOC eq	6.03E+00	1.32E-01	2.14E-02	1.91E-02	8.40E-04	-2.89E+00
ADP-minerals&metals	kg Sb eq	9.04E-04	3.31E-06	9.24E-07	4.01E-06	1.04E-08	-8.81E-03
ADP-fossil	MJ net calorific value	3.16E+04	9.40E+02	1.69E+02	2.26E+02	1.91E+00	-1.76E+04
WDP	m^3 world eq deprived	1.68E+02	9.05E-02	3.06E-02	2.17E+00	1.65E-02	-1.16E+02
PM	Disease incidence	ND	ND	ND	ND	ND	ND
IRP	kBq U235 eq	ND	ND	ND	ND	ND	ND
ETP-fw	CTUe	ND	ND	ND	ND	ND	ND
HTP-c	CTUh	ND	ND	ND	ND	ND	ND
HTP-nc	CTUh	ND	ND	ND	ND	ND	ND
SQP		ND	ND	ND	ND	ND	ND

GWP-total = Global Warming Potential total
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 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
ADPE = Abiotic depletion potential for non-fossil resources
ADPF = Abiotic depletion potential for fossil resources
WDP = Water (user) deprivation potential, deprivation-weighted water consumption
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
HTP-nc = Potential Comparative Toxic Unit for humans
SQP = Potential soil quality index

The following three indicators should be used with care as the uncertainties on these results are high or as there is limited experience with the indicator : ADP-minerals & metals, ADP-fossil, and WDP.

Resource use:

1 tonne of steel section and rails

Parameter	Unit	A1 – A3	C1	C2	C3	C4	D
PERE	MJ	1.88E+03	6.30E+00	1.02E+01	6.44E+01	3.99E-01	4.75E+02
PERM	MJ	8.94E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.26E-01
PERT	MJ	1.89E+03	6.30E+00	1.02E+01	6.44E+01	3.99E-01	4.74E+02
PENRE	MJ	3.16E+04	9.40E+02	1.69E+02	2.26E+02	1.91E+00	-1.76E+04
PENRM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	3.16E+04	9.40E+02	1.69E+02	2.26E+02	1.91E+00	-1.76E+04
SM	kg	2.73E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.91E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	4.89E+00	4.47E-03	2.61E-03	9.27E-02	4.69E-04	-1.57E+02

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 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

Output flows and waste categories:

1 tonne of steel section and rails

Parameter	Unit	A1 – A3	C1	C2	C3	C4	D
HWD	kg	4.35E-06	5.39E-08	1.22E-08	2.07E-06	4.78E-10	-1.15E-04
NHWD	kg	1.59E+02	1.56E-01	1.35E-02	1.24E-01	2.00E+01	1.75E+02
RWD	kg	5.02E-04	9.82E-04	2.51E-04	2.86E-02	1.34E-05	1.65E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	7.00E+01	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	0.00E+00	9.20E+02	0.00E+00	0.00E+00
MER	kg	2.79E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.95E-02
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

HWD = Hazardous waste disposed

NHWD = Non-hazardous waste disposed

RWD = Radioactive waste disposed

CRU = Components for reuse

MFR = Materials for recycling

MER = Materials for energy recovery

EEE = Exported electrical energy

EET = Exported thermal energy

5 Interpretation of results

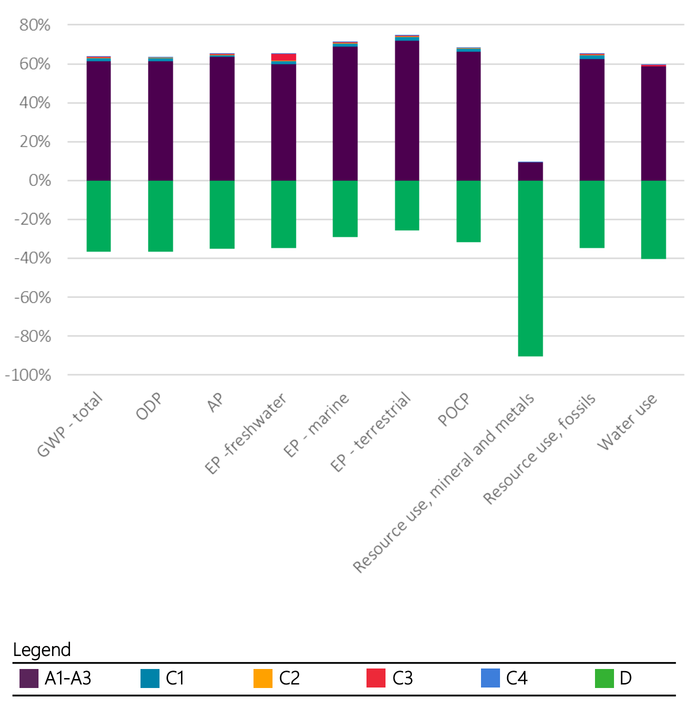
Figure 4 shows the relative contribution per life cycle stage for each of the seven environmental impact categories for 1 tonne of steel sections and rails. Each column represents 100% of the total impact score, which is why all the columns have been set with the same length. A burden is shown as positive (above the 0% axis) and a benefit is shown as negative (below the 0% axis). The main contributors across all impact categories are A1-A3 (burdens) and D (benefits beyond the system boundary).

The manufacturing stage A1-A3 is responsible for almost 100% of the burden in most of the impact categories, specifically, the conversion of iron ore into liquid steel which is the most energy intensive part of the manufacturing process.

The primary site emissions come from the use of coal and coke in the blast furnace, and from the injection of oxygen into the basic oxygen furnace, much of this as combustion of the process gases. These processes give rise to emissions of CO_2, which contribute 94% of the Global Warming Potential (GWP), and sulphur oxides, which are responsible for around 57% of the impact in the Acidification Potential (AP) category. In addition, nitrogen oxides are emitted which contribute 41% of the A1-A3 Acidification Potential, and the vast majority of the Eutrophication Potential (EP-marine and EP-terrestrial). Freshwater Eutrophication Potential is contributed mostly by phosphorous (77%). The combined emissions of nitrogen oxides, carbon monoxide, and sulphur oxides, together contribute 94% of the Photochemical Ozone indicator (POCP).

Figure 4 clearly indicates the relatively small contribution to each impact from the other life cycle stages considered. Of these stages, the most significant contributions are from stage C1 (deconstruction) in GWP, all EP indicators, POCP, and Resource Use, fossil, and stage C3 (waste processing) in EP-freshwater.

Figure 4 LCA results for the steel sections and rails



Module D values are largely derived using the worldsteel value of scrap methodology which is based upon many steel plants worldwide, including both BF/BOF and Electric Arc Furnace (EAF) steel production routes. At end-of- life, the recovered steel product is modelled with a credit given as if it were re-melted in an EAF and substituted by the same amount of steel produced via BF/BOF[31]. The specific emissions that represent the burden in A1-A3, are essentially the same as those responsible for the impact benefits in Module D. It is important that the life cycle of the steel product is considered here, because in most cases, the Module D credit provides significant benefits in terms of reducing the whole life environmental impacts.

Referring to the LCA results, the impact in Module D for Ozone Depletion Potential (ODP) and the Use of Renewable Primary Energy indicator (PERT) are different to other impact categories, being a burden or load rather than a benefit. For ODP, this is because there is greater use of electricity in recycling steel compared to manufacturing it through the BF/BOF route, leading to larger ODP impacts. This also applies to the use of renewable energy, hence why PERT is positive in module D as well.

6 References and product standards

1. Tata Steel's EN 15804 verified EPD programme, General programme instructions, V2 January 2022
2. Tata Steel's EN 15804 verified EPD programme, Product Category Rules Part 1, V2 January 2022
3. Tata Steel's EN 15804 verified EPD programme, Product Category Rules Part 2 – structural steel
4. ISO 14044:2006+A2:2020, Environmental management - Life Cycle Assessment – Requirements and guidelines
5. ISO 14025:2006, Environmental labels and declarations - Type III environmental declarations - Principles and procedures
6. ISO 14040:2006+ A1:2020, Environmental management - Life Cycle Assessment - Principles and framework
7. EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
8. ISO 9001:2015, Quality management systems – Requirements
9. National Highways Sector Schemes for Quality Management in Highway Works, Scheme 3B, Stocking and distribution activities for structural steel products, July 2016
10. Construction Products Regulation 2013
11. ISO 14001:2015, Environmental management systems – Requirements with guidance for use
12. BES 6001, Responsible sourcing of construction products
13. REACH, EU regulation for registration, evaluation, authorisation, and restriction of chemicals
14. RoHS, Restriction of hazardous substances directive (EU)
15. EN 10365:2017, Hot rolled steel channels, I and H sections. Dimensions and masses
16. ASTM A6 / A6M, Standard specification for general requirements for rolled structural steel bars, plates, shapes, and sheet piling
17. EN 10025-1:2004, Hot rolled products of structural steels. General technical delivery conditions
18. EN 10225-2:2019, Weldable structural steels for fixed offshore structures. Technical delivery conditions. Sections
19. ASTM A572 / A572M, Standard specification for high strength low alloy columbium-vanadium structural steel
20. ASTM A992 / A992M, Standard specification for structural steel shapes
21. ISO 5003:2016, Flat bottom (Vignole) railway rails 43kg/m and above
22. ISO 22055:2019, Switch and crossing rails
23. EN 13674-1 to 4, Railway applications. Track. Rail
24. EN 14811:2019, Railway applications. Track. Special purpose rail. Grooved rails and associated construction profiles
25. BS 11:2015, Specification for dimensional properties and associated tolerances of railway rails
26. BS 500:2000, Steel sleepers
27. BS 7865:1997+A2:2023, Specification for steel electrical conductor rail for railway motive power supply
28. Sphera; LCAfE: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, Echterdingen, 1992-2025
29. Documentation of LCAfE: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, Echterdingen, 1992-2025
30. EUROFER in cooperation with the World Steel Association, 'A methodology to determine the LCI of steel industry co-products', February 2014
31. World Steel Association: Life Cycle Assessment methodology report, 2017
32. Sansom M and Avery N, Reuse and recycling rates of UK steel demolition arisings, Proceedings of the Institution of Civil Engineers Engineering Sustainability 167, June 2014, Issue ES3, (Tata Steel/ EUROFER survey of members of the National Federation of Demolition Contractors (NFDC) for 'Profiled sheet cladding')
33. EC-JRC, EN 15804 Reference Package, https://eplca.jrc.ec.europa.eu/LCDN/EN15804.xhtml
34. Siebers R. (2021), Dissertation: Development of sustainability key figures for the value chain stages – erection and dismantling – in steel construction, Bergische Universität Wuppertal

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Tata Steel UK Limited is registered in England under number 2280000 with registered office at 18 Grosvenor Place, London, SW1X 7HS

Language English UK 0726