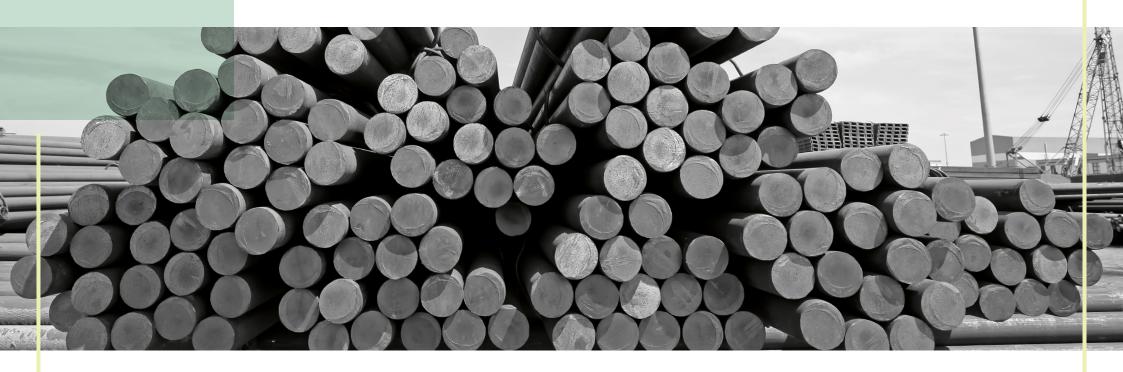
ENVIRONMENTAL PRODUCT DECLARATION



SPECIAL STEEL - SBQ TRT BARS

EPD Registration n°: EPD-IES-0025018

CPC code: 41

Based on PCR: PCR 2019:14 Construction products v 1.3.4

Programme: The International EPD System www.environdec.com **Program Operator.** EPD international AB www.environdec.com

Environmental Product Declaration in accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021

Călărași plant

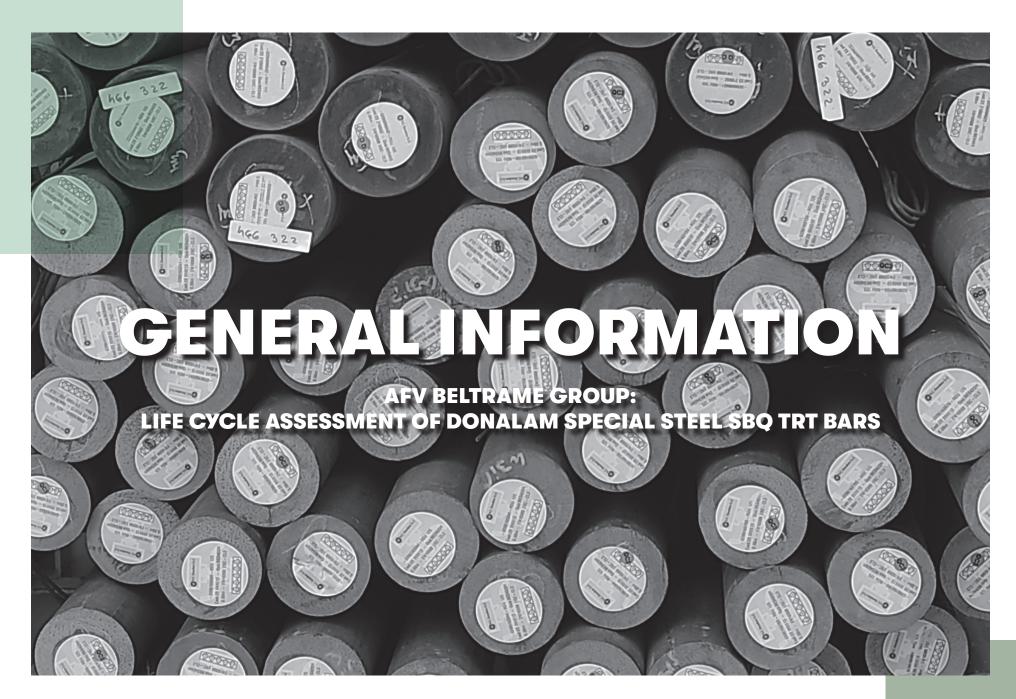
Issue date: 2025-05-09 **Validity date:** 2030-05-08





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



EPD REFERENCES

PROGRAM OPERATOR: EPD INTERNATIONAL AB, BOX 21060, SE-100 31 STOCKHOLM, SWEDEN; info@environdec.com

INDEPENDENT VERIFICATION

ISO standard ISO 21930:2017 and CEN standard EN 15804 served as the core PCR PCR 2019:14 Construction products, Version 1.3.4

PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members. Review chair: Claudia A. Peña, University of Concepciòn, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact.

Independent verification of the declaration and data, according to EN ISO 14025: 2010

Third party verifier: Rina Service S.p.A. Via Corsica 12, Genova - Italy. ACCREDIA: Registration number 0002VV	EPD process certification (internal)	EPD verificati (external)
Accredited by: Accredia Procedure for follow-up during EPD validity involves third party verified	√ Yes	No

- 1. EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, 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. For further information about comparability, see EN 15804 and ISO 14025.
- 2. The EPD owner has the sole ownership, liability, and responsibility for the EPD.





THE COMPANY



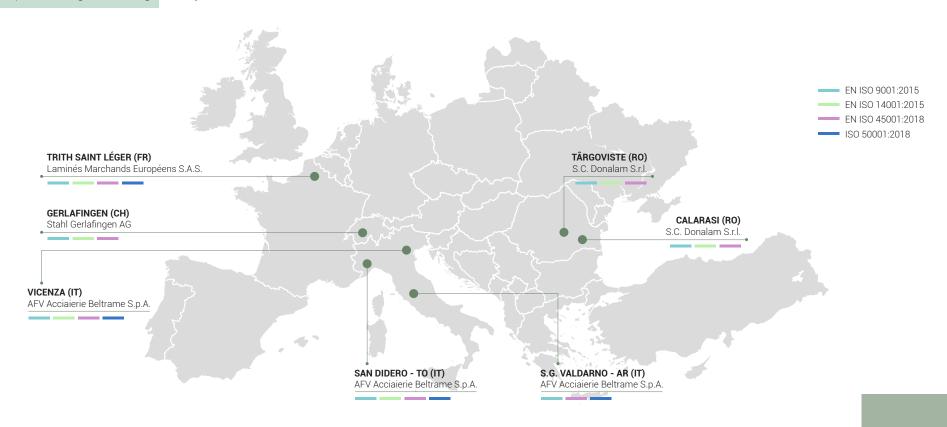
The AFV Beltrame Group has operated in the steel industry for over a century, producing rolled sections for use in construction, shipyards, and excavators.

The facilities, which have a production capacity of approximately **3,2 million tons,** include four electric furnaces and twelve rolling mills. These are scattered in seven plants located in **Italy, France, Switzerland, and Romania.**

Their geographical distribution is very advantageous given the areas where the products are consumed and those where raw materials are purchased.

The AFV Beltrame Group is commercially present in all European markets as well as in the Mediterranean region through shares in local companies, agents, or the internal sales force.

All employees, amounting to approximately **2,250 people**, are strongly committed and motivated to satisfy the customers' needs through constant improvements in production, organization and level of service. In order to support the principles in the code of ethics and the policy regarding **Quality, Health and Safety, Environment** and **Energy** (QHSEE), all production plants have adopted an Integrated Management System.





DETAIL PRODUCT DESCRIPTION

This EPD refers to special steel - SBQ bars, with and without thermal treatment, produced at Calarasi (RO) plant, with rolling mill process, starting from steel cast blooms acquired by external supplier varying steel grades, e.g. S355, C45, 42CrMo4 etc. This EPD covers 113,424 tons of SBQ bars production.

DECLARED UNIT (D.U.) The declared unit is 1 ton (1 000 kg) of special steel - SBQ bar.

PRODUCT DIMENSIONS AND SPECIFIC STANDARDS:

- ► EN ISO 683-1:2018
- ► EN ISO 683-2:2018
- ► EN 10025-2:2005
- ► Attestation of conformity system 2+ (CE marking)

PROPLICT	CTANDADD	DIMENSIO	ONS (mm)	THICKNESS (mm)		
PRODUCT	STANDARD	from	to	from	to	
Round bars	EN 10060:2003	73	350	-	-	
Square bars	EN 10059:2003	-	-	100	250	

CONTACTS

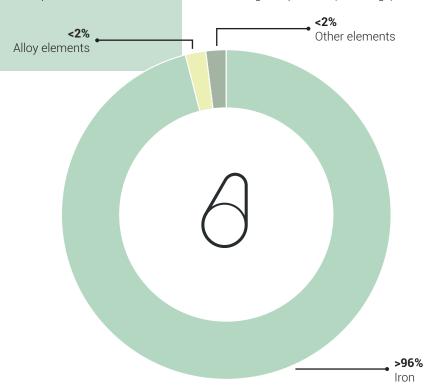
EPD OWNER: Donalam SRL, Str. Prelungirea Bucuresti Nr 246, 910125, Calarasi - Romania Giovan Battista Landra (gb.landra@beltrame-group.com), Phone: +39 0444 967245 Andrea Costa (a.costa@beltrame-group.com, Phone: +39 0444 967367 Elena Aurelia Toma (e.colceag@beltrame-group.com), Phone: +04 0727 375 635 Technical support to Beltrame Group was provided by Alperia (Via Dodiciville, Bolzano)



CONTENT DECLARATION

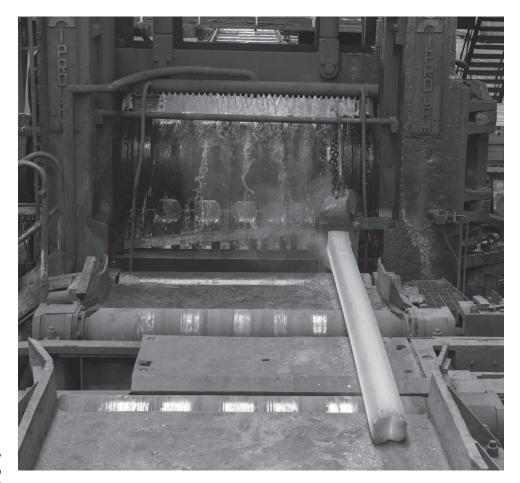


The product here considered has the following composition (in average):



No packaging is required for functional unit delivery and distribution.

Billets purchased and processed at the Calarasi plant are sourced entirely from third-party suppliers so the data of post-consumer material is not available The recycled content relative to the finished product shown in the "Additional information" section refers to an average of what is declared by suppliers





SCOPE AND TYPE OF EPD®



THE APPROACH USED IN THIS EPD IS "CRADLE TO GATE WITH OPTIONS" ONE

The detailed environmental performance (in terms of potential environmental impacts, use of resources and waste generation) is presented for the three phases Upstream, Core and Downstream and related sub-phases (A1-A2-A3-A4-C1-C2-C3-C4-D). Construction installation (A5) and use phase (B1-B7) are modules not declared (ND). The electricity mix used for Donalam-Calarasi plant is modeled as a mix of electricity taken from the grid with warranty certificates and some without, resulting in a GWP-GHG of 0.274 kg CO₂e/kWh



TYPE OF EPD®: Product EPD®



REPORT LCA: Life Cycle Assessment (LCA) applied to Special steel - SBQ bars



REFERENCE PERIOD: 2023



GEOGRAPHICAL SCOPE OF THE EPD: World according to sales market conditions.

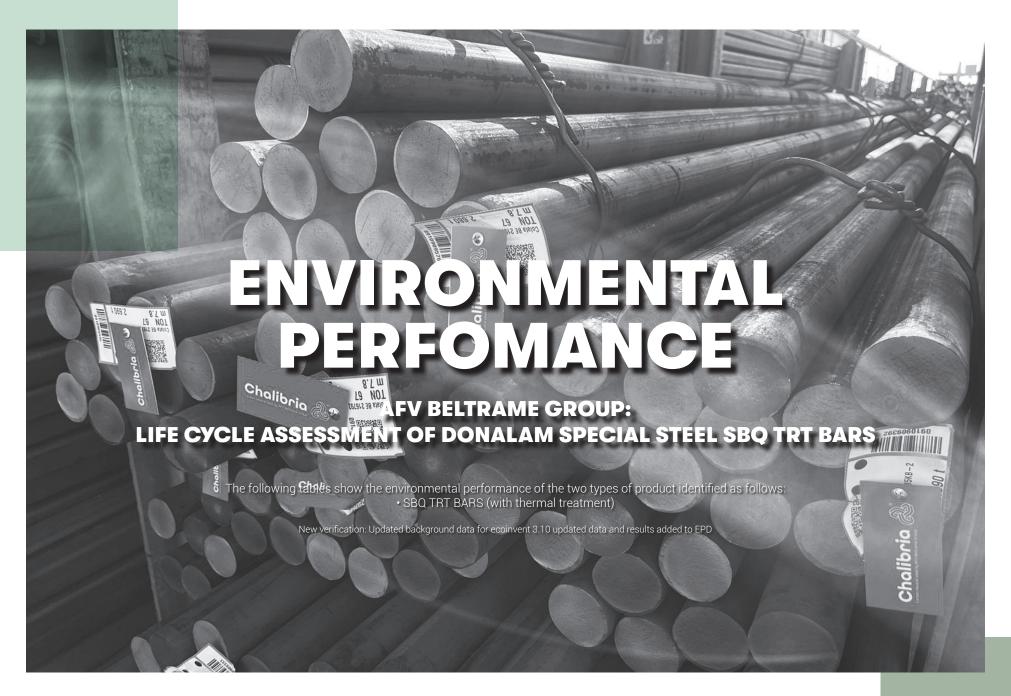


SOFTWARE: SimaPro ver. 9.5 (www.pre.nl)



MAIN DATABASE: EF 3.1 normalization and weighting set: Ecoinvent 3.10 Environmental declarations published within the same product category, though originating from different programs, may not be comparable.





ENVIRONMENTAL PERFOMANCE

If module C is included in the EPD, the results of modules A1-A3 should not be considered independently. To ensure a complete and accurate assessment of environmental impacts, the results of module C must also be taken into account. 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.



GWP: Global warming potential, total; **GWP,f:** Global warming potential, fossil; **GWP,b:** Global warming potential, biogenic;

GWP,luluc: Global warming potential, land use & land use change; **GWP,qhq:** Global warming potential, excluding biogenic

uptake emission and storage.

ODP: Ozone depletion potential; **AP:** Acidification Potential;

EP,f: Eutrophication potential, freshwater; **EP,m:** Eutrophication potential, marine; **EP,t:** Eutrophication potential, terrestrial;

POCP: Photochemical ozone creation potential;

ADPE: Abiotic depletion potential minerals & metals*; **ADPF:** Abiotic depletion potential fossil fuels*;

WDP: Water use deprivation potential*.

*: The results of these environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ENVIRONMENTAL IMPACTS PER DECLARED UNIT											
Potential environmental	UNITS / D.U.	UPSTREAM	CORE			DOWNSTREAM					D
impacts	014110 / <i>D</i> .0.	A1	A2	АЗ	A1-A3 TOTAL	A4	C1	C2	C3	C4	5
GWP (a)	kg CO ₂ eq	6,56E+02	7,90E+01	1,79E+02	9,14E+02	1,18E+02	2,40E+01	3,85E+01	1,30E+00	1,44E-01	-2,58E+02
GWP,f	kg CO ₂ eq	6,50E+02	7,82E+01	1,78E+02	9,05E+02	1,17E+02	2,39E+01	3,85E+01	1,26E+00	1,44E-01	-2,59E+02
GWP,b	kg CO ₂ eq	5,94E+00	6,23E-01	1,93E+00	8,50E+00	1,31E-01	2,62E-03	2,65E-02	4,08E-02	1,23E-05	1,43E+00
GWP,luluc (b)	kg CO ₂ eq	4,05E-01	1,05E-01	2,09E-03	5,12E-01	4,96E-02	2,08E-03	1,27E-02	3,53E-03	1,32E-05	-1,37E-02
GWP,ghg (c)	kg CO ₂ eq	6,51E+02	7,84E+01	1,78E+02	9,07E+02	1,17E+02	2,40E+01	3,85E+01	1,26E+00	1,44E-01	-2,59E+02
ODP	kg CFC11 eq	1,23E-05	1,06E-06	6,00E-08	1,34E-05	2,41E-06	3,66E-07	7,69E-07	2,29E-08	2,09E-09	-3,77E-07
AP	mol H+ eq	3,13E+00	1,26E+00	1,62E+00	6,02E+00	2,92E-01	2,16E-01	1,53E-01	7,59E-03	1,27E-03	-8,73E-01
EP,f	kg P eq	3,56E-01	2,35E-02	7,38E-04	3,80E-01	1,04E-02	6,99E-04	2,58E-03	1,09E-03	7,08E-06	-8,02E-02
EP,m	kg N eq	6,26E-01	3,15E-01	7,89E-01	1,73E+00	7,62E-02	1,00E-01	5,77E-02	1,41E-03	5,71E-04	-1,26E-01
EP,t	mol N eq	6,36E+00	3,45E+00	8,62E+00	1,84E+01	8,20E-01	1,10E+00	6,28E-01	1,33E-02	6,24E-03	-2,32E+00
POCP	kg NMVOC eq	2,28E+00	9,64E-01	2,04E+00	5,29E+00	4,83E-01	3,27E-01	2,33E-01	4,30E-03	1,89E-03	-6,85E-01
ADPE (d) (e)	kg Sb eq	3,67E-03	1,94E-04	3,13E-05	3,89E-03	3,33E-04	8,54E-06	1,24E-04	1,61E-05	5,28E-08	-3,80E-03
ADPF (d)	MJ	1,22E+04	1,15E+03	4,76E+01	1,34E+04	1,77E+03	3,13E+02	5,43E+02	2,81E+01	1,85E+00	-2,09E+03
WDP*	m³ world eq.deprived	2,03E+02	1,03E+01	1,20E+01	2,25E+02	9,09E+00	6,79E-01	2,23E+00	3,40E-01	4,14E-03	3,56E+01

Additional environmental impact indicators are computed in the LCA report but not reported in the EPD.

(a) The total global warming potential (GWP-total) is the sum (see C.2) of GWP-fossil, GWP-biogenic, GWP-luluc.

(c) The GWP-GHG indicator is identical to GWP-total except that the characterisation factor (CF) for biogenic CO2 is set to zero.

(d) The abiotic depletion potential is calculated and declared in two different indicators: ADP-minerals&metals include all non-renewable, abiotic material resources (i.e. excepting fossil resources); ADP-fossil include all fossil resources and includes uranium.

(e) Ultimate reserve model of the ADP-minerals&metals model.



⁽b) It is permitted to omit GWP-luluc as separate information if its contribution is <5 % of GWP-total over the declared modules excluding module D.

ENVIRONMENTAL PERFOMANCE



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 raw materials; **RSF:** Use of renewable secondary fuels; **NRSF:** Use of non-renewable secondary fuels;

FW: Use of net fresh water.

ENVIRONMENTAL IMPACTS PER DECLARED UNIT											
Potential environmental	UNITS / D.U.	UPSTREAM	CORE			DOWNSTREAM					D
impacts	014110 / D.O.	A1	A2	А3	A1-A3 TOTAL	A4	C1	C2	C3	C4	D
PERE	MJ	2,27E+03	1,17E+02	2,47E+00	2,39E+03	3,88E+01	1,87E+00	8,93E+00	7,24E+00	1,51E-02	-7,35E+00
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-6,48E+00
PERT	MJ	2,27E+03	1,17E+02	2,47E+00	2,39E+03	3,88E+01	1,87E+00	8,93E+00	7,24E+00	1,51E-02	-1,38E+01
PENRE	MJ	1,21E+04	1,15E+03	4,76E+01	1,33E+04	1,77E+03	3,13E+02	5,43E+02	8,83E+01	1,85E+00	-7,68E+02
PENRM	MJ	6,03E+01	0,00E+00	0,00E+00	6,03E+01	0,00E+00	0,00E+00	0,00E+00	-6,03E+01	0,00E+00	0,00E+00
PENRT	MJ	1,22E+04	1,15E+03	4,76E+01	1,34E+04	1,77E+03	3,13E+02	5,43E+02	2,81E+01	1,85E+00	-7,68E+02
SM	Kg	7,18E+06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	1,27E+01	5,23E-01	1,42E+00	1,47E+01	3,08E-01	2,24E-02	7,44E-02	2,34E-02	1,36E-04	-1,16E-01

^{*}Totals may not correspond to the sum of the individual contributes due to approximations.



ENVIRONMENTAL PERFOMANCE



HWD: Hazardous waste disposed;

NHWD: Non-hazardous waste disposed;

RWD: Radioactive waste disposed;

CRU: Components for re-use; **MFR:** Materials for recycling;

MER: Materials for energy recovery;

EE: Exported energy.

ENVIRONMENTAL IMPACTS PER DECLARED UNIT											
Potential environmental	UNITS / D.U.	UPSTREAM	STREAM CORE			DOWNSTREAM					D
impacts	UNITS / D.U.	A1	A2	А3	A1-A3 TOTAL	A4	C1	C2	C3	C4	D
HWD	kg	4,47E-01	2,74E-02	2,90E-01	7,65E-01	4,97E-02	2,86E-03	1,35E-02	1,53E-03	1,79E-05	-8,60E-03
NHWD	kg	7,13E+01	1,18E+01	3,83E+00	8,70E+01	1,46E+02	1,92E-01	2,58E+01	8,91E-02	5,00E+01	-2,23E+00
RWD	kg	4,91E-02	3,28E-03	4,99E-05	5,24E-02	8,69E-04	3,44E-05	1,73E-04	1,90E-04	2,17E-07	-6,59E-04
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,50E-01	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00



CALCULATION RULES



METHODOLOGY

The environmental burden of the product has been calculated according to the GPI v. 4.0 issued by the International EPD System¹ (Cradle to gate with options).

This declaration is based on the application of Life Cycle Assessment (LCA) methodology to the whole life-cycle system.

Special steel - SBQ bars at plant level, was described by using specific data from manufacturing facility (Calarasi) for year 2023.

Customized LCA² questionnaires were used to gather in-depth information about all aspects of the production system (for example, raw materials specifications, pre treatments, process efficiencies, air emissions, waste management), ultimately providing a complete picture of the environmental burden of the system from raw materials supply (A1) to Transport (A2) and Manufacturing (A3). The use phase was not considered according to PCR, while transport to final destination (A4) and end-of-life phases (C1-C2-C3-C4-D) were considered. A distance of 200 km from operation plant and dismantling site was adopted. According to World Steel and EuroFer statistics a collection rate of 0,90 was adopted. Therefore, in nominal installation and operating conditions, no emissions to air nor to water shall occur.

Data quality has been assessed and validated during data collection process. According to EN:15804 the applied cut-off criterion for mass and energy flows is 1%.

DECLARED UNIT

Bars are usually traded in mass so that the declared unit is 1 ton of special steel - SBQ bar.





¹⁾ International EPD System is managed by EPD International AB (www.environdec.com).

²⁾ The LCA methodology is standardized at international level by ISO 14040 and ISO 14044.

CALCULATION RULES



UPSTREAM	CORE		DOWNSTREAM	
		v		v

According to the PCR 2019:14 v. 1.3.4 the main activities are listed and divided in three subsystems: **UPSTREAM Process, CORE Module, DOWNSTREAM Process.**

	UPSTREAM		CORE	DOWNSTREAM		
	Scrap pre-treatment		Supplying transport	A4	Distribution	
	Demolition		Billets production			
	Demontion		Hot rolling process	C1	De-costruction/demolition	
	Shearing		Packaging	C2	Transport Waste processing	
A1	Crushing	A2/ A3	Internal handing			
	Material and energy ware production	, (0	Ancillary activities	C3		
			Air emission	C4	Disposal	
	Other raw materials		Water emission		·	
	Energy		Wastes	D	Reuse-Recovery-Recycling potentia	

Figure 1. Scheme of the considered system boundaries (including upstream, core and downstream main processes).



UPSTREAM PROCESS



UPSTREAM CORE DOWNSTREAM







Scheme of the considered system boundaries (upstream processes).



Production of blooms.



Production of materials and ancillaries.





Specific secondary materials pre-treatments, where appropriate.





A1 - Raw Materials Supply



CORE PROCESS



UPSTREAM CORE DOWNSTREAM







Scheme of the considered system boundaries (core processes).



Raw materials transportation from production or collection facilities to the production plant and internal transportation.





Packaging materials.





Specific secondary materials pre-treatments, where appropriate.

Treatment of waste generated from the manufacturing processes.



A2 - Transportation + A3 - Manufacturing



DOWNSTREAM PROCESS



UPSTREAM CORE DOWNSTREAM









A4 DISTRIBUTION

Transport to the customers. Distances estimated considering the transported quantities and the distances from Vicenza plant to the client. Final products are delivered to many national and international areas.



C1 DE-CONSTRUCTION DEMOLITION

Dismantling and demolition operations required to remove the product from the building. Initial onsite sorting of the materials is included as well.



C2 TRANSPORT

Transportation of the discarded product as part of the waste processing (to recycling site or to a final disposal site).



WASTE PROCESSING

Waste processing, including collection of waste fraction from deconstruction and waste processing of material flows intended for reuse, recycling and energy recovery.



C4 DISPOSAL

Waste disposal including physical pre-treatment and management of the disposal site.



REUSE - RECOVERY RECYCLING POTENTIAL

Environmental impacts associated to waste use after the investigated system (including recycling).

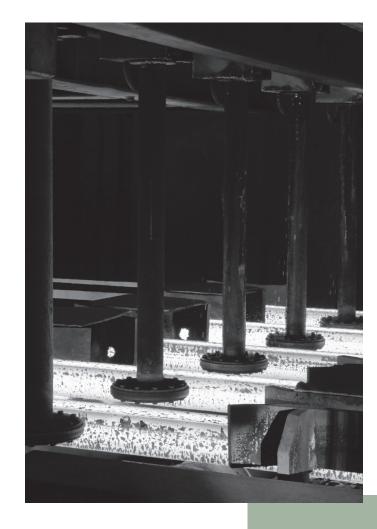


ADDITIONAL INFORMATION



Main environmental characteristics of the considered plants are:

- 1. Prevention and reduction of air emission:
 - automation and control of furnace combustion, recovery and use of low NOx burners;
 - the furnaces are equipped with temperature control zones and combustion installation with self-recovering burners;
 - air pollution monitoring for each campaign for all existing funnels, in the site, which fall within the limits of the
 actual environmental legislation and the recommendations for primary and secondary measures according to
 BAT to reduce pollutant emissions;
 - for reduce emissions and consumptions, at the end of 2023 a new furnace has been put into operation, this furnace has high-performance and it is automated. It has recuperating heat and low NOx burners are used.
- 2. Minimisation of water consumption by using a recirculating water from wells, minimum 95% recirculated water. This is done by treatment system with filters, water's recirculation, decantation and cooling.
- 3. Waste management using the following techniques:
 - prevention of produced wastes by improving maintenance and operation, training and control;
 - proper collection and storage to facilitate recovery;
 - on-site recovery and recycling of wood waste coming from transports of raw materials (blooms), reused for the packaging of the delivered bars and sawdust waste that we recover for trees fertilization separation of the scale in the water treatment process and external recovery to authorized external companies;
 - · external recovery for all ferrous metal wastes;
 - recovery of oils and packaging from cardboard and plastics by authorized external companies;
 - involving employees in waste management. Every year we implement environmental projects from employees which are awarded;
 - a small part of the total waste that cannot be recycled is intended for the final disposal of authorized external companies;
 - annual communication to customers related to the environment, health and safety and the sustainable life cycle of the product which can be recycled as scrap metal and steel.
- 4. Radioactivity monitoring of raw materials by means of detection equipment.
- 5. Maintaining of the environmental certification in accordance with the standard SR EN ISO 14001:2015.
- 6. The calculation of recycled content for Calarasi plant is carried out differently from other plants. It takes as reference the recycled content of billets and blooms that are purchased from external suppliers, each of which declares the content of its own product. By averaging the single recycled content on the amount purchased, the overall recycled content is obtained. For 2023, the recycled content for Calarasi plant was 60,78%.





REFERENCES



EN 15804:2012+A2:2019

ISO 14040 : 2021

• ISO 14044 : 2021

Life Cycle Assessment (LCA) of special steel - SBQ bars

General Programme Instructions, v 4.0

PCR 2019:14 - Construction products - v 1.3.4



