

OLIFER

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ENVIRONMENTAL PRODUCT DECLARATION

HOT ROLLED STEEL PROFILES IN EQUAL AND UNEQUAL ANGLES, T PROFILES, U CHANNELS, CROSS IRON, BULB FLATS

DECLARATION N°:
OLIFER-01

DATE OF ISSUE:
13/12/2024

CPC CODE:
412

REGISTRATION N°:
EPDITALY0851

VALID UNTIL:
13/12/2029

IN ACCORDANCE WITH:
ISO 14025
EN 15804:2012+A2:2019
PCR ICMQ-001/15, REV. 3

OLIFER S.R.L.
Via Guglielmo Marconi, 4, 25076 Odolo (BS)



General Information

REFERENCE AND CONTACTS

EPD OWNER: OLIFER S.R.L. , Via Guglielmo Marconi, 4, 25076 Odolo (BS) - ITALY; manufacturing plant is located in the same site.

ENVIRONMENTAL MANAGER: Nicola Oliva;
Company partner 345 629 8076 ; n.oliva@olifer.it

OLIFER

TECHNICAL SUPPORT to Olifer S.r.l. was provided by Life Cycle Engineering, Italy
(info@studiolce.it, www.lcengineering.eu) (info@studiolce.it, www.lcengineering.eu)



PROGRAM OPERATOR: EPDItaly, Via Gaetano De Castilia 10, 20124 Milano - ITALIA

VERIFICATION INFORMATION

This declaration has been developed referring to the EPDItaly, following the "Regolamento di EPD Italy" V6.0; further information and the document itself are available at: www.epditaly.it
EPD document valid within the following geographical area: Italy and other countries according to sales market conditions.

CEN standard EN 15804 served as the core PCR
(PCR ICMQ-001/15 Construction products, REV.3, 2019-12-02)
PCR review was conducted by ICMQ S.p.A , contact via info@epditaly.it.

Independent verification of the EPD and its data,
in accordance with EN ISO 14025:2010

EPD process certification
(Internal)

EPD verification
(External)

Thirty party verification performed by ICMQ SpA, via De Castilia, 10 20124 Milano (www.icmq.it).
Accredited by: Accredia

Environmental declarations published within the same product category, though originating from different programs, may not be comparable. In particular, EPDs of construction products may not be comparable if they do not comply with EN 15804.

The EPD Owner releases EPDItaly from any non-compliance with environmental legislation.

The EPD Owner shall be responsible for supporting information and evidence.

EPDItaly disclaims any responsibility for the information, data and results provided by the EPD Owner for the life cycle assessment.

The Company



ODOLO (BS)

Via Guglielmo Marconi, 4, 25076
Odolo (BS) - ITALY

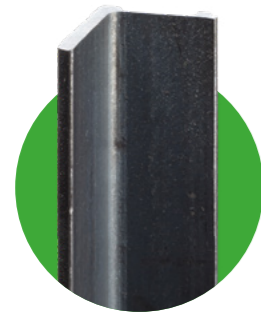
Olifer Srl is an Italian company with a long tradition in the hot rolled and drawn sections sector. Founded in 1860 in Odolo (Brescia), it specialises in the production of high quality hot rolled sections, both standard and customised, for industrial applications. Olifer S.r.l is part of the Olifin Group.

The production follow the process of pre heating of billets and hot rolling in order to produce a wide range of hot rolled profiles.

Information on the product covered by **the EPD**

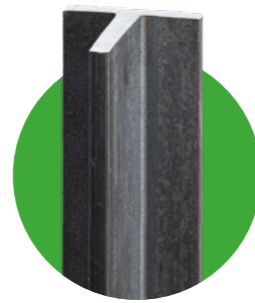
Hot rolled steel profiles are produced using supplied steel billets, from electric-arc furnace production technology, the billets feed the rolling mill after being pre-heated in a pre-heating furnace. The process turns out steel profiles that meet various national and international specifications.

PRODUCT FEATURES:



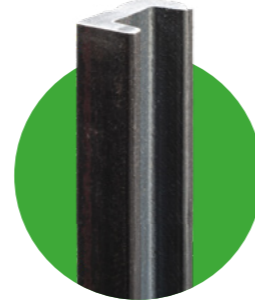
EQUAL AND UNEQUAL ANGLES

Width from 30 to 80 mm with thickness up to 12 mm, CE marked, suitable in metal construction for the construction of load-bearing structures, scaffolding, and reinforcement. They are common in industrial buildings, warehouses and bridges.



T PROFILES

Width from 30 to 50 mm with thickness up to 12 mm, CE marked suitable for structural support, often combined with other profiles to form frames, beams and steel structures.



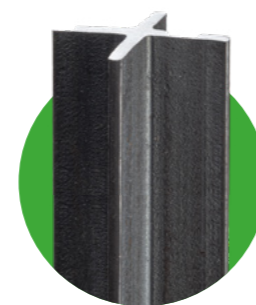
U CHANNELS

Width from 40 to 120 mm with thickness up to 12 mm, CE marked, suitable as reinforcing elements in applications such as rail guides, window frames and various supports.



BULB FLATS

Width from 80 to 120 mm with thickness up to 8 mm, suitable in the naval sector for hull construction and reinforcement interiors, due to their corrosion resistance and ability to support heavy loads.



CROSS IRONS

Width from 40 to 50 mm with thickness up to 5 mm. Used in load-bearing structures with a focus on strength torsional resistance, they find application in the most complex constructions.

Technical datasheets of the products covered by this EPD can be asked to the company contact.

Olifer is also committed to quality certifications and system management UNI EN ISO 9001 (certificate number IGQ 9229B, first issued on 1992-12-21, last issued on 2021-12-31) certified by IGQ – Istituto italiano di Garanzia della Qualità.

Detailed Product Description

INFORMATION	DESCRIPTION
PRODUCT IDENTIFICATION	Hot rolled steel profiles in equal and unequal angles, t profiles, u channels, cross iron, bulb flats
PRODUCT PROPERTIES - HOT ROLLED STEEL PROFILES	Steel billets coming from external suppliers, produced with electric arc furnace technology (EAF), are processed in site with hot rolling process.
	Yield stress (Re) : 235 MPA-370 MPA
	Quality: S235JR, S235J0, S235J2, S275JR, S275J0, S275J2, S355JR, S355J0, S355J0W, S355J2, S355K2, S355J0WP, AH36, DH36, A grade, C40
PLANT FEATURES	On-site air emission control system
	On-site dumping water control system
	On-site system to recycle water used in process
	In/out materials/products and casting process monitored to prevent nuclear radiation

No substance present in the product by more than 0.10% by weight is on the 'List of Substances of Very High Concern' (SVHC) for authorisation under REACH (Regulation (EC) n. 1907/2006 of the European Parliament and of Council of 18 December 2006 on registration, evaluation, Authorization and restriction of chemicals).

Scope and Type of EPD

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

TYPE OF EPD: specific for hot rolled steel products

MAIN DATABASE: Ecoinvent v 3.10

APPLIED LCA SOFTWARE: Simapro v 9.6.0.1

REPORT LCA: Life Cycle Assessment applied to hot rolled steel profiles in equal and unequal angles, t profiles, u channels, cross iron, bulb flats" for EPD purposes - LCA report

GEOGRAPHICAL SCOPE OF THE EPD: worldwide according to sales market conditions

COMMUNICATION: EPD publication on EPD Italy Program Operator platform for B2B communication

TABLE OF MODULES CONTAINS THE LIST OF MODULES INCLUDED OR NOT INCLUDED IN THE EPD¹:

TABLE OF MODULES																		
MODULE	PRODUCTION STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE								END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
modules declared	✓	✓	✓	✓	MND	MND	MND	MND	MND	MND	MND	MND	✓	✓	✓	✓	✓	
geography	IT	IT	IT	WLD	-	-	-	-	-	-	-	-	WLD	WLD	WLD	WLD	WLD	
specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	
variations - products	NOT RELEVANT			-	-	-	-	-	-	-	-	-	-	-	-	-	-	
variations - sites	NOT RELEVANT			-	-	-	-	-	-	-	-	-	-	-	-	-	-	

¹ ✓ = module included; MND = module not declared;

LCA Results

ENVIRONMENTAL IMPACTS PER DECLARED UNIT: 1 TON OF HOT ROLLED PROFILES.

The detailed environmental performance (in terms of use of resources, pollutant emissions 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).

The numbers reported in the following tables are the outcome of rounding.

	UNIT	UPSTREAM	CORE PROCESS			DOWNSTREAM					
		A1	A2	A3	A1:A3	A4	C1	C2	C3	C4	D
GWP	kg CO ₂ eq	8.27E+02	7.74E-01	1.05E+02	9.33E+02	4.17E+01	5.88E+00	7.70E+00	1.23E-01	5.98E-01	4.24E+01
GWP,f	kg CO ₂ eq	8.25E+02	7.74E-01	1.05E+02	9.31E+02	4.17E+01	5.88E+00	7.70E+00	1.21E-01	5.98E-01	4.24E+01
GWP,b	kg CO ₂ eq	1.77E+00	2.60E-05	7.44E-04	1.77E+00	1.40E-03	2.29E-04	2.65E-04	2.78E-03	2.96E-05	6.34E-03
GWP,luluc	kg CO ₂ eq	2.07E-01	1.87E-05	1.26E-04	2.07E-01	1.01E-03	2.03E-04	1.91E-04	3.12E-05	1.69E-05	4.44E-04
ODP	kg CFC-11 eq	3.05E-05	1.56E-08	3.46E-08	3.05E-05	8.38E-07	9.25E-08	1.58E-07	2.78E-09	1.14E-08	8.48E-08
AP	mol H ⁺ eq	2.46E+00	1.86E-03	1.83E-02	2.48E+00	1.00E-01	5.49E-02	2.73E-02	7.87E-04	3.15E-03	1.54E-01
EP,f	kg P eq	3.41E-02	6.39E-07	1.66E-05	3.41E-02	3.44E-05	5.55E-06	6.50E-06	5.46E-07	8.81E-07	1.80E-03
EP,m	kg N eq	5.66E-01	7.07E-04	7.94E-03	5.74E-01	3.81E-02	2.58E-02	1.16E-02	3.52E-04	1.41E-03	3.01E-02
EP,t	mol N eq	6.22E+00	7.73E-03	8.64E-02	6.31E+00	4.16E-01	2.83E-01	1.27E-01	3.91E-03	1.54E-02	3.55E-01
POCP	kg NMVOC eq	2.46E+00	3.25E-03	2.89E-02	2.49E+00	1.75E-01	8.42E-02	4.45E-02	1.18E-03	4.95E-03	1.19E-01
ADPE*	kg Sb eq	9.91E-04	2.52E-08	1.96E-07	9.92E-04	1.36E-06	2.46E-07	2.56E-07	3.25E-08	2.07E-08	3.46E-04
ADPF*	MJ	1.24E+04	1.01E+01	2.43E+01	1.24E+04	5.42E+02	7.74E+01	1.02E+02	1.08E+01	7.85E+00	3.63E+02
WDP*	m ³	2.52E+02	4.28E-03	4.14E+01	2.93E+02	2.30E-01	6.11E-02	4.35E-02	7.02E-02	4.21E-03	4.32E+00

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,ghg 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*

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

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

Resource Use Per Declared Unit

	UNIT	UPSTREAM	CORE PROCESS			DOWNSTREAM					
		A1	A2	A3	A1:A3	A4	C1	C2	C3	C4	D
PERE	MJ	7.57E+02	3.50E-02	2.94E-01	7.57E+02	1.88E+00	1.70E-01	3.56E-01	1.16E+01	2.89E-02	2.61E+01
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	0.00E+00
PERT	MJ	7.57E+02	3.50E-02	2.94E-01	7.57E+02	1.88E+00	1.70E-01	3.56E-01	1.16E+01	2.89E-02	2.61E+01
PENRE	MJ	1.37E+04	1.01E+01	1.98E+01	1.37E+04	5.42E+02	7.74E+01	1.02E+02	1.08E+01	7.85E+00	3.63E+02
PENRM	MJ	0.00E+00	0.00E+00	4.56E+00	4.56E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	1.37E+04	1.01E+01	2.43E+01	1.37E+04	5.42E+02	7.74E+01	1.02E+02	1.08E+01	7.85E+00	3.63E+02
SM	kg	1.09E+03	0.00E+00	0.00E+00	1.09E+03	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	2.25E+01	2.58E-04	9.23E-01	2.34E+01	1.39E-02	2.42E-03	2.63E-03	3.81E-02	2.18E-04	1.19E-01

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

Output Flows And Waste Categories Per Declared Unit

	UNIT	UPSTREAM	CORE PROCESS			DOWNSTREAM					
		A1	A2	A3	A1:A3	A4	C1	C2	C3	C4	D
HWD	kg	8.29E-03	0.00E+00	7.00E-02	7.83E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NHWD	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	5.00E+01	0.00E+00
RWD	kg	3.55E-03	0.00E+00	0.00E+00	3.55E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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	1.64E+02	0.00E+00	1.02E+02	2.66E+02	0.00E+00	0.00E+00	0.00E+00	9.50E+02	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

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



Calculation Rules

The environmental burden of the product has been calculated according to EN 15804:2012+A2:2019 and PCR ICMQ-001/15 v3, data collection period is the year 2023.

This declaration is a cradle to gate with options EPD type, based on the application of Life Cycle Assessment (LCA) methodology to the whole life-cycle system. In the whole LCA model, infrastructures and production equipments are not taken into account.

DECLARED UNIT

ACCORDING TO EN:15804 and reference PCR, the declared unit is 1 ton of hot rolled steel profiles, ready to be delivered to the final customers.

ASSUMPTIONS

END OF LIFE: A representative distance (50 km by truck) has been considered for the transportation of waste materials at the end-of-life to a recycling/disposal site (C2). At the end-of-life, the product is assumed to be recycled (95% of the total) and disposed (the remaining 5%).

CUT OFF RULES

ACCORDING TO EN: 15804, cut off limit is 1% for both mass and energy flows in the considered system.

DATA QUALITY

CUSTOMIZED LCA QUESTIONNAIRES has been used to gather in-depth information about all aspects of the production system (for example, raw materials contents and specifications, process efficiencies, air and water emissions, waste management), in order to provide a complete picture of the environmental burden of the system from Raw Materials supply (A1) to Transport (A2) and Manufacturing (A3). The use phase has not been considered according to EN:15804 and PCR ICMQ-001/15 v3, while transport to final destination (A4) and end of life (C1-C2-C3-C4-D) has been included. Data quality has been assessed and validated during data collection process.

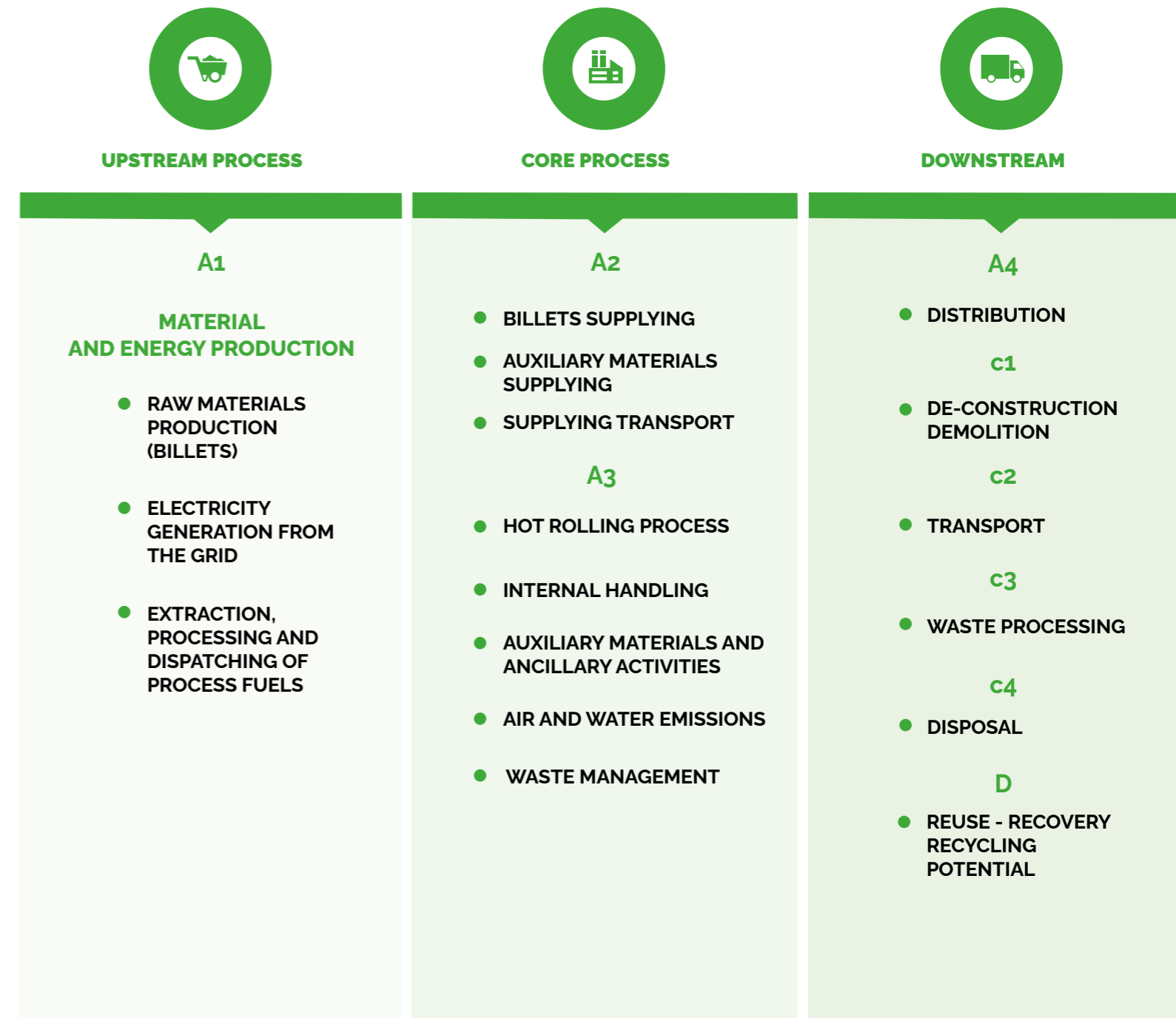
ALLOCATIONS

ACCORDING TO ISO 14040 AND 14044, allocation is avoided whenever possible by dividing the system into sub-systems. When allocation cannot be avoided physical properties are used to drive flow analysis.

Scenarios And Additional Technical Information

SYSTEM BOUNDARIES

Hot rolled steel profiles production system has been evaluated from raw materials extraction and production, steel production and transport of final products (Scheme 1).



SCHEME 1: Broad scheme of hot-rolled steel profiles, in which the main activities included in the system boundaries, are listed and divided in the three subsystems: **UPSTREAM PROCESS, CORE MODULE** and **DOWNSTREAM PROCESS**.

Scenarios And Additional Technical Information

SYSTEM BOUNDARIES

The subsystems identified within hot rolled steel in profiles production are the following:

	UPSTREAM PROCESS
A1	Production of billets in suppliers plants, with EAF (Electric Arc Furnace) technology and production of energy used by Olifer, in detail electric energy from the grid and electric energy from photovoltaic system.
	CORE PROCESS
A2	Transportation of billets and auxiliary materials from suppliers to Olifer S.r.l.
A3	Hot rolled process to produce steel profiles in Olifer plant, included plant ancillary activities, air and water emissions, waste management and transport to disposal plant.
	DOWNSTREAM PROCESS
A4	Final product distribution from Olifer S.r.l. plant to an average customer or place of use (downstream process). The 70% of the final product is delivered to Italian sites, the 11% to Germany, and the remaining 20% to other foreign countries (4% to Netherlands, 3% to Austria and Great Britain, and others). On average, a tons of steel profiles (finished product) is transported for 517 km by truck.
C2	Transportation of the discarded product as part of the waste processing (to recycling site or to a final disposal site).
C3	Waste processing, including collection of waste fraction from deconstruction and waste processing of material flows intended for reuse, recycling and energy recovery.
C4	Waste disposal including physical pre-treatment and management of the disposal site.
D	Environmental impacts associated to waste use after the investigated system (including recycling). In this module impacts arising from steel recycling are accounted, including avoided impacts associated to primary steel production. The result is expressed as net value between direct impact (i.e. recycling steel in EAF furnace) and avoided impact (i.e. producing steel from iron ore in BOF furnace).

Other Optional Additional Environmental Information

The Olifer company supports the **preservation and protection** of the environment by promoting the use and production of electricity from renewable sources.

The plant located in Odolo is equipped with **4,160 polycrystalline photovoltaic modules** with a total installed power of 998.40 kwp that contribute to the company's energy needs.

In addition, special attention is paid to the proper disposal of waste and the periodic and scheduled control of atmospheric emissions and cooling water quality.



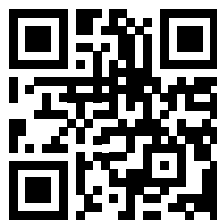


References

- LIFE CYCLE ASSESSMENT (LCA) APPLIED TO HOT ROLLED STEEL PRODUCTS IN PROFILES - FINAL REPORT, V1
- EN 15804:2012 + A2:2019: 2014 SUSTAINABILITY OF CONSTRUCTION WORKS — ENVIRONMENTAL PRODUCT DECLARATIONS — CORE RULES FOR THE PRODUCT CATEGORY OF CONSTRUCTION PRODUCTS.
- EPDITALY REGULATION, VERSION 6.0 OF 30/10/2023 AVAILABLE AT [HTTPS://WWW.EPDITALY.IT/IL-PROGRAMMA-EPDITALY/](https://www.epditaly.it/il-programma-epditaly/)
- PCR ICMQ-001/15 ON CONSTRUCTION PRODUCTS REV. 3.0 (COMPLIANT WITH EN 15804:2012 + A2:2019)
- REFERENCE ENERGY MIX, AIB (ASSOCIATION OF ISSUING BODIES) DATA RELATED TO YEAR 2022

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