Environmental Product Declaration

In compliance with the ISO 14025 standard for:

Breda Metals Spa manufactured stainless steel sheets

BREDA Architectural Metals

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Programme operator:	EPD International AB	
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Programme information

Programme:	The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com info@environdec.com

Product category rules (PCR): Fabricated steel products, except construction products, machinery and equipment, N° S-P-00690, version 2.12, UN CPC 412, 422, 429
PCR review was conducted by: The Technical Committee of the International EPD® System. Review chair: Massimo Marino Contact via info@environdec.com
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☒ EPD verification
Third party verifier: Rina Services Spa, Via Corsica, 12 – 16128 - Genova - ITALY, www.rina.org In case of accredited certification bodies: ACCREDIA (reg.n° 001H) In case of recognised individual verifiers: Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable.

Company information

Owner of the EPD:
Breda Metals

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Description of the organization:
Breda Metals's supplier operates since 1979 in the field of surface treatment, coloring and screen printing
/chemical etching of stainless steel and non-ferrous metals, mainly intended for the lift industry, construction and furniture components field.

The productive plant was located in Italy up to December 2000, in Cignone (Corte de' Cortesi), in a location where the productive needs of the company were not met.

In order to rationalize the productive cycle and improve employees' working conditions, the company decided to transfer the production department in the new Pescarolo warehouse. The transfer took place in January 2001.

The establishment carries out surface processing of stainless steel sheets and, even to a lesser extent, aluminium and brass products through the machining, polishing, electro-coloration and decoration phases.

Stainless steel is well known for its valuable mechanical and physical properties, which make it a considerable choice in several application fields. Due to resistance to corrosion, it is a suitable material to be used everywhere environmental conditions are particularly aggressive, both in construction and industry fields. It is highly elastic and fire resistant, which make it particularly functional for the realization of anti-seismic structures. It is easy to be processed and cleaned and its hygienic properties allow the use in the food industry as well as the health field.

Stainless steel is also an environmentally sustainable choice, being completely recyclable endless times without losing its intrinsic characteristics[1].

[1]Le dichiarazioni riguardanti la qualità dell'acciaio inox e la sua riciclabilità sono tratte da pubblicazioni di Centro Inox (Associazione italiana per lo sviluppo degli acciai inossidabili), reperibili al seguente indirizzo web: http://www.centroinox.it/pubblicazioni

Product-related or management system-related certifications:

- certificate n ° 891/97/S for compliance with the ISO 9001: 2015 standard;
- certificate n° EMS-178/S for compliance with the ISO 14001:2015 standard;
- certificate n° OHS-616 for compliance with the ISO 45001:2018 standard;
- certificate n° EnergyMS-175 for compliance with the ISO 50001:2018 standard.

Name and location of production site:
Breda Metals via per Pieve Terzagni, 15 Pescarolo ed Uniti (CR) 26033

Product information

The following Life Cycle Assessment study is about the production of 4 different types of stainless steel sheets, which can be distinguished for their different surface treatments that allow to realize a huge range of polishing, brushing and decorations.

The productive process includes:

- specific surface treatments of the stainless steel
- primary packing with plastic protection
- secondary packing on customized pallets following the specific dimensions of the product.

Hereby the chemical composition (casting analysis) and the main mechanical and functional properties of the stainless steels at room-temperature regarding the alloys under consideration, according to the norms UNI EN 10088-1 and UNI EN 10088-2:

CHEMICAL COMPOSITION (CASTING ANALYSIS):

AISI	C	Si	Mn	P max	S	N	Cr	Mo	Nb	Ni	Altri
304	≤0,07	≤1,00	≤2,00	0,045	≤0,015	≤0,11	da 17,5 a 19,5	-	-	da 8,0 a 10,5	-
316	≤0,07	≤1,00	≤2,00	0,045	≤0,015	≤0,11	da 16,5 a 15,5	da 2,00 a 2,50	-	da 10,0 a 13,0	-
430	≤0,08	≤1,00	≤1,00	0,04	≤0,015	-	da 16,0 a 18,0	-	-	-	-
441	≤0,030	≤1,00	≤1,00	0,04	≤0,015	-	da 17,5 a 18,5	-	da [3xC+0,30] a 1,00	-	Ti da 0,10 a 0,60

CHEMICAL AND FUNCTIONAL PROPERTIES:

AISI	Unit Load proof strength at 0,2% Rp0,2	Unit Load proof strength at 0,1% Rp1,0	Tensile Strength Rm	Elongation after rupture	Intergranular Corrosion Resistance
	MPa min. transversal		MPa	A80 %min. (transversal)	At the supply state
304	230	260	da 540 a 750	45	si
316	240	270	da 530 a 680	40	si
430	280	-	da 450 a 600	20	si
441	250	-	da 430 a 630	18	si

Product name: Spectrum Metals **dimensions 1250x2500 mm, mirror colored PVD finish**

Product description: Starting from the stainless steel coil it is possible to obtain the sheets in the required length through the decoiling plant.

Thus, the obtained sheet is first processed through supermirror polishing and then to pvd coloring plant (physical vapor deposition).

The coloration of the stainless steel is obtained through the deposition of a plasma which allows the synthesis of nano-structured thin film coatings. This process occurs within vacuum chamber where the vaporized and activated metal ions condense on the surface of the stainless steel sheet, forming coatings of different nature (oxides, nitrides, carbides). The nano metric thickness of the coating adheres perfectly to the stainless steel substrate and does not change the aspect of the metal base finish. There fore we can obtain as many products as the possible combinations of colors and finishes.

Then, the product is protected with a specific plastic film and packed on a wooden pallet, ready to be sent to the customer.

Thanks to the versatility and the intrinsic properties of the stainless steel, TSteel® sheets can satisfy several aesthetical need sin architecture and design fields (coatings for internal and external areas, pieces of furniture).

Product name: **Electro-colored sheet, dimensions 1250x2500 mm, polishing finish**

Product description: Starting from the stainless steel coil it is possible to obtain the sheets in the required length through the decoiling plant. Thus, the obtained sheet is first processed through mirror polishing and then colored. The stainless steel coloring consists in the immersion of the stainless steel sheet in several galvanized baths; a surface conversion phenomena determines the color, given that a molecular change on the surface creates different oxide layers which are overlapping to the passivation film, typical of the stainless steel. The formation of the colors is made by “interference”, taking advantage of the difference in phase of the rays of light refracted by the layers of oxide and the rays reflected by the surface of the underlying metal.

Then, the product is protected with a specific plastic film and packed on a wooden pallet, ready to be sent to the customer.

Product name: **Patterned / Embossed sheet, dimensions 1250x2500 mm, patterned finish**

Product description: The patterned sheet is obtained by lamination, done with double rollers which imprint an embossed design on the stainless steel coil; this decoration can be impressed on both sides or only one side, depending on the customer's request. Then it is possible to obtain the sheets in the required length through the decoiling plant.

Then, the product is protected with a specific plastic film and packed on a wooden pallet, ready to be sent to the customer.

Product name: **Supermirror sheet, dimensions 1250x2500 mm, supermirror manufacture**

Product description: Starting from the stainless steel coil it is possible to obtain the sheets in the required length through the decoiling plant. Thus, the obtained sheet is processed with a supermirror finish using damp polishing heads.

Then, the product is protected with a specific plastic film and packed on a wooden pallet, ready to be sent to the customer.

LCA information

Functional unit / declared unit: The declared unit is 1000 kg of manufactured stainless steel.

Reference service life:

If compared to the previous version, an assessment of the product life cycle has been carried out based on the "cradle-to-gate" method. The product life cycles ends when the product is ready to be transferred to the next operator of the supply chain. This choice was made due to fact that Breda Metals is not always related to the end-use of the product and this leads to the impossibility to obtain objective information on the end life phase.

Time representativeness:

The year to which the site-specific data collected in Breda Metals warehouse refers is 2021.
The remaining generic data are taken from the Ecoinvent v. 3.8 bank data, chosen considering the under listed quality requirements and by following the principles of accuracy, completeness, representativeness, consistency and reproducibility:

- time factors: the data relate to the last three years maximum;
- geography: the data refers to the country of origin or, failing this, it refers to the geographical continental area that the country of origin belongs to.
- Technology: the data regard a combination of technologies, that is the average weight of the available technologies, except for transport for which, in absence of detailed information, we considered the more unfavorable technology as a precaution.

As regards the cut-off, this has not been applied because we considered all the production processes.

Database(s) and LCA software used:

In order to value the data reported in this environmental product declaration, we have used the standard methodology LCA (Life Cycle Assessment), according to the Regulations ISO 14040:2006 e 14044:2006, and concerning the evaluation of the environmental impact associated to each phase of a product life cycle. Moreover, we have considered the PCR references indications (PCR 2014:10 version 2.12 2019/09/06) for stainless steel products: UN CPC 412, 422 & 429 "Fabricated steel products, except construction products, machinery and equipment".
The calculation LCA was performed through the SimaPro 9.3.0.3, using the method EPD 2018 (agg. V1.03).
The data used to realize the analysis include site-specific data, directly collected in the Breda Metals warehouse, and generic data (selected generics and other generics) that come from the Ecoinvent v. 3.8 data bank, integrated in the SimaPro 9.3.0.3 software used to elaborate the results. It should be noted that the contribution of other generic data (proxy) does not exceed 10% of the total environmental impacts.

Description of system boundaries:

The LCA methodology allows to determine the environmental impacts of a product or service in terms of resource consumption and environment emissions and production of waste during the life cycle ("cradle to gate").

As indicated in the PCR references (PCR 2014:10 – Version 2.12 "Fabricated steel products, except construction products, machinery and equipment") and shown here below, system limits of stainless steel include the production and the transport of the raw material, the stainless steel surface manufacturing and the packaging of the stainless steel sheets. In details, the processes to consider for the assessment of the life cycle of the stainless steel sheets are branched as follows:

UPSTREAM MODULE

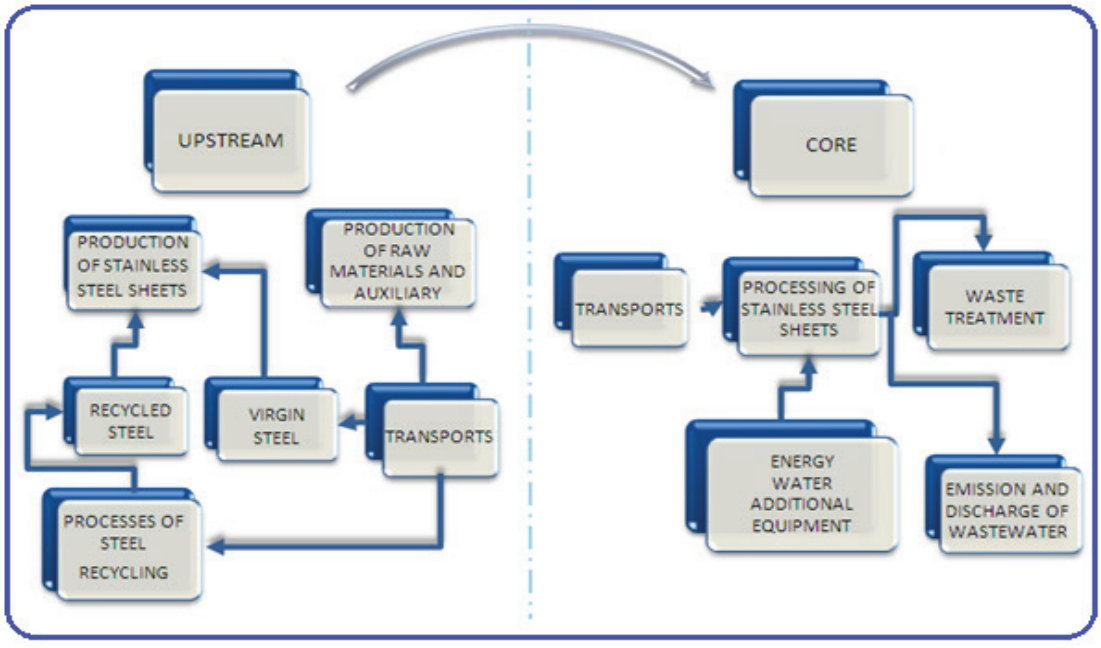
They are the "upstream" processes of the stainless steel sheets manufacturing in the Breda Metals warehouse and include:

- extraction/ production of raw material;
- recycle processes of the recycled material used in the product;
- transport of raw material to the suppliers;
- Production of the primary packaging (protective film) and the secondary packaging (wooden pallet and protective cases).

CORE MODULE

They are the processes related to the production and they include:

- transport of the raw material from suppliers to Breda Metals
- manufacturing activity and possible assembly;
- treatment of the waste generated during the production;
- Impacts due to the production of electric energy, in agreement with the hypothesis of the fuel mix used.



Limits of the under study system

In accordance with Regulation (EC) No 1907/2006, the articles covered by this Environmental Product Declaration do not contain neither substances intended to be released during normal and reasonably foreseeable conditions of use nor substances of very high concern (SVHC) included in the identifying substances list above a concentration of 0,1 % weight by weight (w/w).

Life cycle stages excluded:

The following items are not included in the system, based on what specified in the PCR:

- the construction of the establishment, the production of manufacturing equipment and other capital goods with an average duration of life beyond three years;
- research and development activities;
- Staff activities and business trips.

Content of materials and chemical substances

The following charts show the percentage by weight of the different materials making up the products under the LCA study.

Product

Type of product	material/substance	[Kg]	%
Stainless steel sheet	Stainless steel AISI 304,316,430 and 441	1000	100

Packaging

Description packaging:

In order to distribute to the final customer or to the supplier, the products are preserved with plastic film (polyethylene) and transported on wooden pallets protected with cardboard corners (for shipments in Italy) or wooden cases (for foreign shipments).

Consumer packaging:

Type of product	material/substance	[Kg]	%
Primary packaging	Polyethylene plastic film (PE)	10,5 (*)	100
Secondary packaging	Wooden pallet + hardboard	234 (*)	73
	Iron cross support	4 (*)	1
	Cardboard corners	2 (*)	1
	Wooden cases	79 (*)	25

(*) average value

Environmental performance

Potential environmental impact

SPECTRUM METALS (data refer to 1000 kg manufactured stainless steel)

PARAMETER		UNIT	Upstream	Core	TOTAL
Global warming potential (GWP)	Fossil	kg CO_2 eq.	5383,38	698,25	6081,63
	Biogenic	kg CO_2 eq.	640,94	26,46	667,39
	Land use and land transformation	kg CO_2 eq.	13,50	0,33	13,83
	TOTAL	kg CO_2 eq.	6037,82	725,04	6762,86
Depletion potential of the stratospheric ozone layer (ODP)		kg CFC 11 eq.	0,0003	0,0001	0,0004
Acidification potential (AP)		kg SO_2 eq.	32,32	3,17	35,50
Eutrophication potential (EP)		kg PO_4^{3-} eq.	13,85	0,79	14,64
Photochemical oxidant formation potential (POFP)		kg NMVOC eq.	21,71	2,18	23,89
Abiotic depletion potential – Elements		kg Sb eq.	0,25	0,002	0,25
Abiotic depletion potential – Fossil resources		MJ, net calorific value	65005,07	9285,03	74290,10
Water scarcity potential		m^3 eq.	2282,81	115,15	2397,96

ELECTRO-COLORED POLISHED SHEET (data refer to 1000 kg manufactured stainless steel)

PARAMETER		UNIT	Upstream	Core	TOTAL
Global warming potential (GWP)	Fossil	kg CO_2 eq.	5526,29	1918,63	7444,09
	Biogenic	kg CO_2 eq.	697,24	27,66	725,74
	Land use and land transformation	kg CO_2 eq.	10,99	0,46	11,45
	TOTAL	kg CO_2 eq.	6234,52	1946,75	8181,28
Depletion potential of the stratospheric ozone layer (ODP)		kg CFC 11 eq.	0,0003	0,0002	0,0005
Acidification potential (AP)		kg SO_2 eq.	32,79	4,44	37,23
Eutrophication potential (EP)		kg PO_4^{3-} eq.	15,34	1,25	16,59
Photochemical oxidant formation potential (POFP)		kg NMVOC eq.	22,74	3,61	26,35
Abiotic depletion potential – Elements		kg Sb eq.	0,225	0,002	0,23
Abiotic depletion potential – Fossil resources		MJ, net calorific value	67860,73	28111,23	95971,95
Water scarcity potential		m^3 eq.	2482,66	1799,89	4282,55

PATTERNED SHEET (data refer to 1000 kg manufactured stainless steel)

PARAMETER		UNIT	Upstream	Core	TOTAL
Global warming potential (GWP)	Fossil	kg CO_2 eq.	9175,00	581,12	9756,12
	Biogenic	kg CO_2 eq.	831,52	22,40	853,92
	Land use and land transformation	kg CO_2 eq.	10,60	0,26	10,87
	TOTAL	kg CO_2 eq.	10017,12	603,79	10620,91
Depletion potential of the stratospheric ozone layer (ODP)		kg CFC 11 eq.	0,0009	0,0001	0,0010
Acidification potential (AP)		kg SO_2 eq.	54,34	2,48	56,81
Eutrophication potential (EP)		kg PO_4^{3-} eq.	21,55	0,63	22,18
Photochemical oxidant formation potential (POFP)		kg NMVOC eq.	39,57	1,64	41,21
Abiotic depletion potential – Elements		kg Sb eq.	0,330	0,001	0,331
Abiotic depletion potential – Fossil resources		MJ, net calorific value	108677,36	7397,45	116074,81
Water scarcity potential		m^3 eq.	3474,55	111,34	3585,90

SUPER MIRROR SHEET (data refer to 1000 kg manufactured stainless steel)

PARAMETER		UNIT	Upstream	Core	TOTAL
Global warming potential (GWP)	Fossil	kg CO_2 eq.	5326,56	620,86	5947,42
	Biogenic	kg CO_2 eq.	579,30	23,19	602,49
	Land use and land transformation	kg CO_2 eq.	12,39	0,29	12,68
	TOTAL	kg CO_2 eq.	5918,25	644,34	6562,59
Depletion potential of the stratospheric ozone layer (ODP)		kg CFC 11 eq.	0,00027	0,000074	0,00034
Acidification potential (AP)		kg SO_2 eq.	31,47	2,89	34,36
Eutrophication potential (EP)		kg PO_4^{3-} eq.	12,34	0,71	13,05
Photochemical oxidant formation potential (POFP)		kg NMVOC eq.	21,04	1,99	23,03
Abiotic depletion potential – Elements		kg Sb eq.	0,229	0,001	0,231
Abiotic depletion potential – Fossil resources		MJ, net calorific value	63696,67	8001,44	71698,11
Water scarcity potential		m^3 eq.	2226,90	131,33	2358,23

Use of resources

SPECTRUM METALS (data refer to 1000 kg manufactured stainless steel)

PARAMETER		UNIT	Upstream	Core	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	21481,78	624,80	22106,58
	Used as raw materials	MJ, net calorific value	5203,15	0	5203,15
	TOTAL	MJ, net calorific value	26684,93	624,80	27309,73
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	74080,85	10511,82	84592,67
	Used as raw materials	MJ, net calorific value	379,04	0,00	379,04
	TOTAL	MJ, net calorific value	74459,89	10511,82	84971,71
Secondary material		kg	1642,60	2,75	1645,35
Renewable secondary fuels		MJ, net calorific value	0	0	0
Non-renewable secondary fuels		MJ, net calorific value	0	0	0
Net use of fresh water		m^3	22,78	2,45	25,23

ELECTRO-COLORED POLISHED SHEET (data refer to 1000 kg manufactured stainless steel)

PARAMETER		UNIT	Upstream	Core	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	23878,98	656,68	24535,66
	Used as raw materials	MJ, net calorific value	7930,21	0	7930,21
	TOTAL	MJ, net calorific value	31809,19	656,68	32465,87
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	77313,16	29348,65	106661,81
	Used as raw materials	MJ, net calorific value	597,54	0	597,54
	TOTAL	MJ, net calorific value	77910,70	29348,65	107259,35
Secondary material		kg	1678,71	123,19	1801,9
Renewable secondary fuels		MJ, net calorific value	0	0	0
Non-renewable secondary fuels		MJ, net calorific value	0	0	0
Net use of fresh water		m^3	27,74	2,82	30,56

PATTERNED SHEET (data refer to 1000 kg manufactured stainless steel)

PARAMETER		UNIT	Upstream	Core	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	20370,33	520,08	20890,41
	Used as raw materials	MJ, net calorific value	2262,19	0	2262,19
	TOTAL	MJ, net calorific value	22632,52	520,08	23152,60
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	122410,39	8425,78	130836,17
	Used as raw materials	MJ, net calorific value	457,23	0	457,23
	TOTAL	MJ, net calorific value	122867,62	8425,78	131293,40
Secondary material		kg	1624,06	1,84	1625,92
Renewable secondary fuels		MJ, net calorific value	0	0	0
Non-renewable secondary fuels		MJ, net calorific value	0	0	0
Net use of fresh water		m^3	38,93	2,06	40,99

SUPER MIRROR SHEET (data refer to 1000 kg manufactured stainless steel)

PARAMETER		UNIT	Upstream	Core	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	19710,11	541,06	20251,17
	Used as raw materials	MJ, net calorific value	2856,16	0	2856,16
	TOTAL	MJ, net calorific value	22566,27	541,06	23107,34
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	72409,26	9066,10	81475,36
	Used as raw materials	MJ, net calorific value	504,07	0	504,07
	TOTAL	MJ, net calorific value	72913,33	9066,10	81979,43
Secondary material		kg	1641,01	2,77	1643,78
Renewable secondary fuels		MJ, net calorific value	0	0	0
Non-renewable secondary fuels		MJ, net calorific value	0	0	0
Net use of fresh water		m^3	21,87	2,16	24,03

Waste production and output flows

Waste production

SPECTRUM METALS (data refer to 1000 kg manufactured stainless steel)

PARAMETER	UNIT	Upstream	Core	TOTAL
Hazardous waste disposed	kg	0,06	0,01	0,07
Non-hazardous waste disposed	kg	6427,34	42,70	6470,04
Radioactive waste disposed	kg	0,22	0,03	0,24

ELECTRO-COLORED POLISHED SHEET (data refer to 1000 kg manufactured stainless steel)

PARAMETER	UNIT	Upstream	Core	TOTAL
Hazardous waste disposed	kg	0,06	0,03	0,09
Non-hazardous waste disposed	kg	6561,35	355,47	6916,81
Radioactive waste disposed	kg	0,23	0,03	0,26

PATTERNED SHEET (data refer to 1000 kg manufactured stainless steel)

PARAMETER	UNIT	Upstream	Core	TOTAL
Hazardous waste disposed	kg	0,08	0,01	0,09
Non-hazardous waste disposed	kg	6355,46	28,56	6384,02
Radioactive waste disposed	kg	0,37	0,02	0,39

SUPER MIRROR SHEET (data refer to 1000 kg manufactured stainless steel)

PARAMETER	UNIT	Upstream	Core	TOTAL
Hazardous waste disposed	kg	0,06	0,01	0,07
Non-hazardous waste disposed	kg	6387,52	38,60	6426,12
Radioactive waste disposed	kg	0,21	0,02	0,23

Output flows

SPECTRUM METALS (data refer to 1000 kg manufactured stainless steel)

PARAMETER	UNIT	Upstream	Core	TOTAL
Components for reuse	kg	0	0	0
Material for recycling	kg	0	0,09	0,09
Materials for energy recovery	kg	0	0,00009	0,00009
Exported energy, electricity	MJ	0	0	0
Exported energy, thermal	MJ	0	0	0

ELECTRO-COLORED POLISHED SHEET (data refer to 1000 kg manufactured stainless steel)

PARAMETER	UNIT	Upstream	Core	TOTAL
Components for reuse	kg	0	0	0
Material for recycling	kg	0	0,09	0,09
Materials for energy recovery	kg	0	0,00009	0,00009
Exported energy, electricity	MJ	0	0	0
Exported energy, thermal	MJ	0	0	0

PATTERNED SHEET (data refer to 1000 kg manufactured stainless steel)

PARAMETER	UNIT	Upstream	Core	TOTAL
Components for reuse	kg	0	0	0
Material for recycling	kg	0	0,09	0,09
Materials for energy recovery	kg	0	0,00009	0,00009
Exported energy, electricity	MJ	0	0	0
Exported energy, thermal	MJ	0	0	0

SUPER MIRROR SHEET (data refer to 1000 kg manufactured stainless steel)

PARAMETER	UNIT	Upstream	Core	TOTAL
Components for reuse	kg	0	0	0
Material for recycling	kg	0	0,09	0,09
Materials for energy recovery	kg	0	0,00009	0,00009
Exported energy, electricity	MJ	0	0	0
Exported energy, thermal	MJ	0	0	0

Additional information

Thanks to the attention for the environment management, the company Breda Metals always stood out. Breda Metals adopted since 2000 a certified Environmental Management System, according to the Regulation ISO 14001.
The Quality Environment Safety integrated management System, according to the Regulations UNI EN ISO 9001, UNI EN ISO 14001
The Quality, Environment, Safety and Energy Management System, according to the Regulations UNI EN ISO 9001, UNI EN ISO 14001, ISO 45001 and ISO 50001 standards, is certified by the RINA

Certification Institute with:

- certificate n ° 891/97/S for compliance with the ISO 9001: 2015 standard;
- certificate n° EMS-178/S for compliance with the ISO 14001:2015 standard;
- certificate n° OHS-616 for compliance with the ISO 45001:2018 standard;
- certificate n° EnergyMS-175 for compliance with the ISO 50001:2018 standard.

Therefore, Breda Metals. has accepted precise and defined commitments regarding Quality, Environment and Safety. For this purpose the company works hard to reach the targets defined in its own Environmental and Safety Policy, that are:

- respect of current laws, contractual, environmental and safety norms;
- plan and realize actions for a major environmental sustainability;
- reduce the more important environmental impacts related to the establishment activity with specific attention for the management of dangerous substances;
- minimize the waste volume to be disposed;
- evaluate the risks and arrange the prevention and protection measures in order to avoid accidents, situation of risks and damage to people;
- collaborate with the local authority;
- aim for a continuous improvement.

In order to reach these goals, the company considers strategic what follows:

- extending this policy to all company levels;
- making the staff feel responsible, educate and train them, informing about the achievement of the set goals;
- monitoring the company processes, the environmental aspects and the risks of any related accident;
- managing the plants according to the high environmental standards and safety;
- planning and implementing action plans to improve continuously the company results, in terms of quality, environment and safety;
- reviewing periodically the objectives and targets, ensuring the policy effectiveness over the time.

Examples for using EPD

The evaluation of the environmental product impact represents an innovative approach in the sustainable planning.

Breda Metals EPD provides information that helps to summarize the environmental impact of an object, in terms of the used energy and greenhouse gas emissions generated by the construction, and compare them to the ones that refer to different solutions employed in the same object for the same life cycle.

By convention, the data in the EPD refer to a hypothetical object that works as a reference, called Declared Unit, which corresponds, in the case under study, to 1000 kg of manufactured stainless steel.

In order to use the data provided for a project evaluation, considering that the stainless steel sheets dimensions change depending on the customer/ supplier's needs, it is necessary to readjust the greenhouse gas emission impacts of a sheet with dimensions 1×1250×2500 mm, which are the most required dimensions.

	Spectrum Metals	Electro-colored polished	Patterned	Supermirror
Declared Unit: 1000 kg machined stainless steel				
Greenhouse emissions [kg CO_2eq/1000kg U.D.]	6762,86	8181,28	10620,91	6562,59
Acidification[kg SO_2eq/1000kg U.D.]	35,50	37,23	56,81	34,36
Photochemical Oxidation [kg C_2H_4eq/1000kg U.D.]	23,89	26,35	41,21	23,03
Eutrophication [kg PO_4^{3-}eq/1000kg U.D.]	14,64	16,59	22,18	13,05
Transformation into a single sheet of standard dimensions 1x1250x2500mm (25 kg per sheet)				
Greenhouse emissions [kg CO_2eq/1000kg U.D.]	169,07	204,54	265,52	164,065
Acidification[kg SO_2eq/1000kg U.D.]	0,888	0,931	1,420	0,859
Photochemical Oxidation [kg C_2H_4eq/1000kg U.D.]	0,597	0,659	1,030	0,576
Eutrophication [kg PO_4^{3-}eq/1000kg U.D.]	0,366	0,415	0,555	0,326

Differences versus previous version

During the period under analysis (year 2021), no significant changes took place either with regard to substantial modifications of the product or even with regard to changes in the production process that could lead to hypothesize changes with an impact on the environment.
The reference PCRs were taken (PCR 2014: 10 UN CPC 412, 422 & 429 - Version 2.12 2019-09-06 "Fabricated steel products, except construction products, machinery and equipment").
The World Steel Association database www.worldsteel.org, recommended for the generic steel data indicated within the reference PCR 2014: 10 - Version 2.12, was not considered, for the following reasons:

- there are only a part of impact categories with respect to those required by the EPD Declaration;
- we took into consideration the Ecoinvent version 3.8 database to maintain continuity with the past as we have always used this database.

References

- General Programme Instructions of the International EPD® System. Version 3.0. (www.environdec.com);

PCR 2014:10. FABRICATED STEEL PRODUCTS, EXCEPTCONSTRUCTION PRODUCTS, MACHINERY ANDEQUIPMENT. Version 2.12;

- "Life Cycle Assessment Report: Lastre di acciaio inox lavorato di Steel Breda Metals, Supermirror, Colorata Lucida e Goffrata" - rev. 01 del 04/07/2022;
- "LCI data for steel products", provided by Eurofer Stainless, The European Steel Association (www.eurofer.eu);
- Database Ecoinvent v. 3.8;
- European Residual Mixes 2019.

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