

ENVIRONMENTAL PRODUCT DECLARATION

According to
UNI EN ISO 14025
and UNI EN 15804:2012+A2:2019 for:
HOT ROLLED STEEL PLATE

From:
Marcegaglia Plates S.p.A.

Programme:
The International EPD® System
www.environdec.com

Programme operator:
EPD International AB

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An EPD should provide the current information and should be updated if conditions change. The stated validity is therefore subject to continuous registration and publication on the website www.environdec.com



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General information

PROGRAMME INFORMATION

| | |
|-------------------|---|
| Programme: | The International EPD [®] System |
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| Website: | www.environdec.com |
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The standard EN 15804 represents the framework for the Product Category Rules (PCR)

Product Category Rules (PCR):
Construction products, 2019:14, version 1.11, UN CPC 4123

The review of the PCR was conducted by:
The Technical Committee of the International EPD[®] System. Review chair: Claudia A. Peña
– Contact via the Secretariat www.environdec.com/contact

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

EPD verification by the individual auditor

Third-party verifier:
Bureau Veritas Italia S.p.A.

Approved by:
International EPD[®] System Technical Committee, supported by the Secretariat

Follow-up procedure during EPD validity involves third-party auditors:
 Yes No

The owner of the EPD has sole ownership and moral and legal responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs for construction products may not be comparable unless they comply with UNI EN 15804. For further information on comparability, refer to UNI EN 15804 and UNI EN ISO 14025.

COMPANY INFORMATION

Ownership of the EPD:

Marcegaglia Plates S.p.A.
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Contact:

For more information on this product declaration and/or its configurations, the following references are available:

Mail: info@marcegaglia.com

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Description of the organisation:

The company Marcegaglia Plates S.p.A, located in San Giorgio di Nogaro, operates in the hot rolling sector and produces heavy plates using a four-high rolling mill. The production process is feeded by a single raw material, a semi-finished thick steel product which, thanks to integrated logistics, first arrives by ship or train and then is transported by truck to the plant.

Thanks to the versatility of the different production lines present, it is possible to obtain a wide range of products, also at the customer's request, through subsequent processing of the heavy sheet metal. The products can be made with different sizes, thermal resistance or surface finish.

PRODUCT INFORMATION

Product name:

Hot rolled steel plate

Product identification:

Hot rolled steel plate

Product description:

The production process starts with the slab (raw material) entry into the plant by means of rail or lorry. Slabs are moved into the loading area head the cutting line, where they are sized into suitable processing semis. The slab loading phase consists of feeding the re-heating hoven by means of an over-head magnet crane.

The temperature inside the pusher re-heating furnace stock-up to approximately 1250°C. It takes about six hours to let the slabs complete this phase and reach the ideal temperature for hot-rolling. After descaling

Certifications relating to the product and/or the management system:

- Quality management system compliant with the requirements of the UNI EN ISO 9001:2015 standard (certificate no. 16499/07/S issued by RINA Services S.P.A.);
- Environmental management system compliant with the requirements of the UNI EN ISO 14001:2015 standard (certificate no. EMS-262/S issued by RINA Services S.P.A);
- Occupational health and safety management system compliant with the requirements of the UNI ISO 45001:2018 standard (certificate no. OHS-260 issued by RINA Services S.P.A);
- Energy management system compliant with the requirements of the UNI CEI EN ISO 50001:2018 standard (certificate no. EnergyMS-137 issued by RINA Services S.P.A);
- Social responsibility management system compliant with the requirements of the SA 8000:2014 standard (certificate no. SA-2040 issued by RINA Services S.P.A).

Name and location of the production sites:

- Plant located in Via Enrico Fermi 33, San Giorgio di Nogaro (UD);
- Plant located in Via Enrico Fermi 28, San Giorgio di Nogaro (UD).

the slab is rolled by a number of passes between a pair of cylinders until the slab thickness is obtained. The plates which need further processing are transferred to the service dedicated areas: edges cutting, mechanical trimming, UT, normalising furnace and/or shotblasting.

From the company website, it is possible to consult the product catalogues within which the technical characteristics are described in detail.

UN CPC CODE:

UN CPC 4123 Flat-rolled products of steel, further worked than hot-rolled.

Geographical scope:

Entire world

LCA INFORMATION

Functional unit:

The functional unit of the system considered is the ton of product.

Reference service life - RSL:

For the products under study, it is not possible to quantify the exact service life as it also depends on their future use. However, it is emphasized that even when the deadline is reached, the product can be recycled and reused again to generate other raw materials.

Time representativeness:

The data user refers to the year 2023.

Database and software used:

Ecoinvent database v.3.10, May 2024 / Software used SimaPro rel. 9.5.0

Description of the system boundaries:

The study is "Cradle to gate with modules C1-C4 and module D (A1-A3 + C + D)" (reference: PCR 2019:14 vers.1.11).

The modules A1-A3 include the procurement processes of the materials (raw materials and auxiliary materials), as well as those of production.

The modules C1-C4 consider the uninstalation, transport, sorting and disposal of components deriving from the end-of-life operations of road barriers. These operations can not be directly checked by the company: in this regard, literature relating to the construction sector is used. It is considered:

- an average diesel consumption equivalent to 239 MJ as well as 28 kWh of electricity for each ton of material demolished;
- an average distance of 80 km to transport the material to the recovery centre;

Module D considers the recovery and recycling potential of steel deriving from end-of-life processes: the calculation of the environmental benefits deriving from the recovery of steel is based on the instructions provided in the document "Product Category Rules for Type III environmental product declaration of construction products to EN 15804:2012 - Par. 6.3.4.6. Benefits and loads beyond the product system boundary, information Module D".

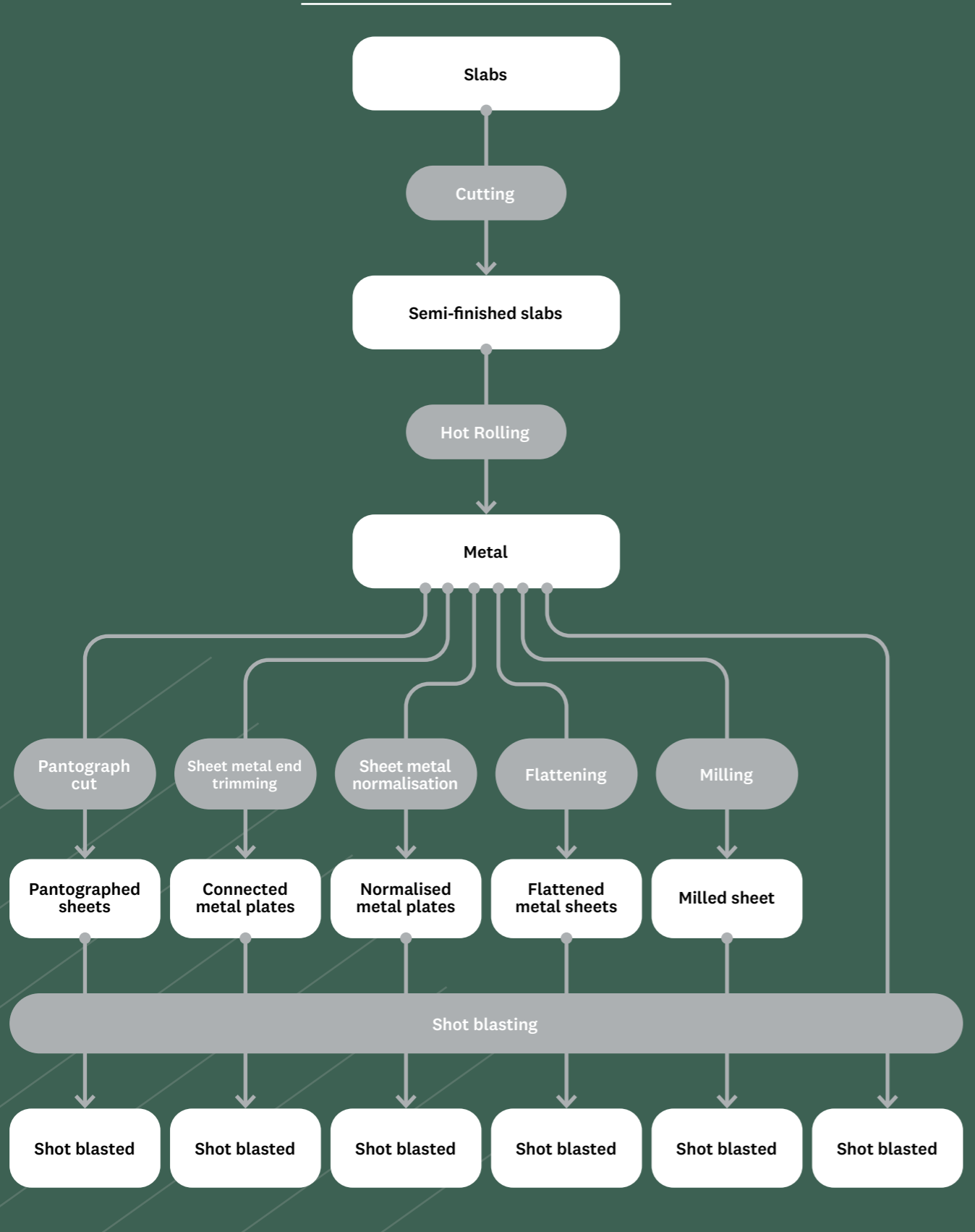
DIFFERENCES VERSUS PREVIOUS VERSIONS

Compared to the previous version of the EPD Declaration (revision of 08/02/2024), the main changes made to the data under analysis are listed below:

- More up-to-date databases were used than those contained in the previous version of the environmental impact study;

- The most up-to-date energy mix was considered (ref.: "European Residual Mixes - Results of the calculation of Residual Mixes for the calendar year 2023 - version 1.0, 2024-05-30");
- Site-specific data (for modules A1, A2 and A3) were collected and used in relation to all the environmental matrices considered.

BLOCK DIAGRAM OF THE SHEET METAL PRODUCTION PROCESS



Other informations:

ROLLING: MAIN ACTIVITY DESCRIPTION

Marcegaglia Plates rolling process starts with the slab marking (for full product traceability) and follows with slab cutting and re-heating treatment.

In each plant, the rolling equipment has an out-put in pure heavy plates of about 400.000 tons/year . Some of which are for subsequent processing such as normalising in line while

rolling - by temperature control - or into the normalization hoven to comply with special requirements.

The production process starts with the slab entry into the plants by means of rail or lorry. The raw material here consists of:

- slabs from outsourcing accredited sources

Rolling Process in details:

Slab cutting

The slab enters the heating furnace to be rolled after being cut into semis by oxy-cut (slab-cutting). Slabs are moved from the plant outside yard into the loading area head the cutting line, where they are sized into suitable processing semis. The oxy-cut line is equipped with oxy-fuel nozzles. Prior the oxy-cut the slab cutting area is heated-up to 300°C in preparation of the cutting.

Re-heating furnace

The slab loading phase consists of feeding the re-heating hoven by means of an over-head magnet crane.

The modular pusher furnace system serves the purpose of moving the slabs into the re-heating hoven to be homogenized prior to hot-rolling. For each slab entering the re-heating hoven there's one exiting it. The temperature inside the re-heating furnace stock-up to approximately 1250°C. It takes about 6hrs to let the slabs complete this phase and reach the ideal temperature for hot-rolling.

As the furnace doors open the hot slab slides down via rolls, the operator from its pulpit located over the rolling line starts the instant chilling of the hot piece by waterspray to clean the surface from scale and oxides created during the reheating phase.

Reversing rolling mill for hr plates

After descaling the slab is rolled by a number of passes between a pair of cylinders controlled by the operator in automatized pulpit. At each pass, the distance in between cylinders is decreased to reduce slab thickness while width and length increases till the final requested dimensions

Cutting and hot-levelling

The flattening line is equipped with rolls controlled by the pulpit operator which grants an adequate view for control.

The shot-blasting machine is fed via moving rolls line where plates are pushed to enter the shot-basting room after which another rolling line conveys them into the flattening machine to get the final result.

The plates is moved again onwards into the hot leveller to get the final requisites in terms of flatness by means of 2 cylinders whose action is also to exclude internal tensions and provide best surface finishing.

Cooling area

The plates rolled are now ready for the cooling-bed designed as a walking beam bed where large fans are employed to blow ambient air aiding heat dissipation and enhancing the cooling process.

Once cooling phase is concluded the each plate is lifted by means of over-head magnet cranes into the specific area to be identified and labelled for further processing - if any - or moved to plant yards ready for selling. The ones which need further processing are transferred to the service dedicated areas: edges cutting, mechanical trimming, UT, normalising furnace and/or shotblasting

Service centre

By cutting it is meant the head-to-tail or edges removal, which is run by different equipments : such as oxy-fuel and plasma cutting machines.

The "oxy-fuel" cutting is a process where a mixture of gas and oxygen spread over - by mobile nozzles/torches which are fixed on supports- the workpiece produces a chemical reaction and the heat part falls down.

Whilst the plasma-cut technology uses mobile supports powered by compressed air and electricity.

Both cutting technologies aim to size the working piece into market standard or Customers' requests.

Both equipment consist of a fix bench and mobile upper system equipped by nozzles /torches.

The automatic numerical control console is located beside each cutting lines

The edge milling is a machining process to cut to size the plate by providing a perfect polished surface of the outer edges. The mechanical milling machine features cutting blades that rotate while pressed against the secured workpiece/the plate. It consists of a fix bench with walking bed to which the plate is secured while 2 blades rotate sidely.

The shot-blasting and the flattening in line equipment provides a finishing of the plate surfaces cleaning. The throwing of manganese metal "shots" to remove oxides and/or other impurities. The cleaned surface is therefore ready for further finishing and/or treatments.

Normalization

Normalisation involves plates heating treatments at specific temperatures to obtain designated chemical, structural and mechanical characteristics

Plates are pushed into the furnace by means of mobile rolls at temperatures between 800°C - 950°C depending on the steel grade and the final applications. Once the normalisation phase is completed the plates are cooled at ambient temperature.

ALLOCATION RULES

A mass-based allocation was made for energy consumption, water discharges, emissions into the atmosphere and waste.

Plates storage and shipments

Once plates have completed the whole cycle compliant with the market or Customers' requirements, they are stored in dedicated area responding to the different means of deliveries: by rail by ship by lorry. According to the collected data the most common mean of transport is lorries which enter the plant to load and deliver directly the plates or to transfer them into subsequent logistic hubs: rail station or ports .

Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation:

| Module | A1-A3 Production phase | | | A4-A5 Construc- tion phase | | B1-B7 Use phase | | | | | | C1-C4 End of life phase | | | | D Benefits and loads beyond system limits | |
|-------------------|---------------------------|-----------|---------------|----------------------------------|-------------------------------|--------------------|-------------|--------|-------------|--------------|------------------------|----------------------------|----------------------------|-----------|------------------|---|--|
| | Supply of raw materials | Transport | Manufacturing | Transport | Construction and installation | Use | Maintenance | Repair | Replacement | Regeneration | Operational energy use | Operational water use | Demolition and disassembly | Transport | Waste processing | Disposal | Reuse-Recovery-Recycling- potential |
| Module | A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
| Modules declared | X | X | X | ND | ND | ND | ND | ND | ND | ND | ND | ND | X | X | X | X | X |
| Geographical area | GLO | GLO | IT | - | - | - | - | - | - | - | - | - | GLO | GLO | GLO | GLO | IT |
| Specific data | > 50% | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Product variation | Not relevant | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Site change | Not relevant | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

X = Considered form

ND = Form not declared

GLO = Global

IT = Italy

Information on the content

The raw material purchased by Marcegaglia Plates S.p.A. is characterized by an average recycled content of 22.7%: this percentage is calculated as a weighted average of the same value associated with the incoming raw material and deriving from both Type III environmental declarations and self-declarations compliant with the UNI EN ISO 14021 standard. The steel comes from both an integral cycle (with an average recycled content of 18.9%) and from an electric furnace (with an average recycled content of 66.8%). The final product “HR heavy plates” is sold loose, therefore the packaging for small surface sheets consists of metal strips and wooden separators certified ISPM - 15 (2009). The quantities of such packaging compared to one ton of final product identify a value lower than 1%. The products do not contain hazardous substances of the SVHC Candidate List for Authorization in quantities greater than 0.1%.

Environmental information

The environmental performance indicators refer to 1 tonne of heavy plate.

POTENTIAL ENVIRONMENTAL IMPACTS

| Impact category | ID | U.o.M. |
|--|------------------|------------------------|
| Global warming - total | GWP - t | kg CO ₂ eq |
| Ozone depletion | ODP | kg CFC11 eq |
| Global warming - fossil resources | GWP - fossil | kg CO ₂ eq |
| Global warming - biogenic | GWP - biogenic | kg CO ₂ eq |
| Global warming - land use | GWP - luluc | kg CO ₂ eq |
| Global warming - greenhouse gas | GWP - GHG | kg CO ₂ eq |
| Photochemical ozone creation | POCP | kg NMVOC eq |
| Acidification | AP | mol H+ eq |
| Eutrophication | EP - freshwater | kg P eq |
| | EP - marine | kg N eq |
| | EP - terrestrial | mol N eq |
| Net water use | WDP | m ³ depriv. |
| Abiotic resources depletion (fossil) | ADP - F | MJ |
| Abiotic resources depletion (non-fossil) | ADP - MM | kg Sb eq |

RESOURCE USE

| Impact category | ID | U.o.M. |
|--|-------|----------------|
| Renewable energy resources (excluding raw materials) | PERE | MJ |
| Renewable energy resources (with raw materials) | PERM | MJ |
| Total renewable energy resources | PERT | MJ |
| Non-renewable energy resources (excluding raw materials) | PENRE | MJ |
| Non-renewable energy resources (with raw materials) | PENRM | MJ |
| Total non-renewable energy resources | PENRT | MJ |
| Secondary resources | SM | kg |
| Renewable secondary fuel | RSF | MJ |
| Non-renewable secondary fuel | NRSF | MJ |
| Net freshwater use | FW | m ³ |

WASTE PRODUCTION

| Impact category | ID | U.o.M. |
|---------------------|-----|--------|
| Hazardous waste | HW | kg |
| Non-hazardous waste | NHW | kg |
| Radioactive waste | RW | kg |

OUTPUT FLOWS

| Impact category | ID | U.o.M. |
|-----------------------------------|----------|--------|
| Reuse components | REUSE | kg |
| Materials for recycle | RECYCLE | kg |
| Materials for energy recovery | EN - REC | kg |
| Exported energy-electrical energy | EE - E | MJ |
| Exported energy-thermal energy | EE - T | MJ |

HEAVY PLATE

| ID | U.o.M. | A1 | A2 | A3 | C1 | C2 | C3 | C4 | D |
|------------------|------------------------|------------|-----------|------------|-----------|-----------|------------|-----------|------------|
| GWP - t | kg CO ₂ eq | 2,406E+03 | 1,124E+02 | 1,546E+02 | 2,398E+01 | 8,559E+00 | 1,610E+01 | 3,759E-01 | -1,060E+03 |
| GWP - fossil | kg CO ₂ eq | 2,405E+03 | 1,121E+02 | 1,558E+02 | 2,397E+01 | 8,552E+00 | 1,611E+01 | 3,757E-01 | -1,059E+03 |
| GWP - biogenic | kg CO ₂ eq | -6,771E-01 | 1,493E-01 | -1,261E+00 | 2,619E-03 | 4,429E-03 | -1,550E-02 | 5,178E-05 | -9,304E-01 |
| GWP - luluc | kg CO ₂ eq | 8,946E-01 | 8,894E-02 | 1,748E-02 | 2,081E-03 | 2,936E-03 | 1,467E-03 | 1,934E-04 | -5,126E-01 |
| GWP - GHG | kg CO ₂ eq | 2,405E+03 | 1,121E+02 | 1,558E+02 | 2,397E+01 | 8,552E+00 | 1,611E+01 | 3,757E-01 | -1,059E+03 |
| ODP | kg CFC-11 eq | 1,000E-05 | 1,592E-06 | 5,902E-06 | 3,669E-07 | 1,725E-07 | 2,500E-07 | 1,086E-08 | -5,080E-06 |
| POCP | kg NMVOC eq | 7,406E+00 | 1,863E+00 | 4,530E-01 | 3,276E-01 | 4,938E-02 | 4,542E-02 | 3,967E-03 | -3,453E+00 |
| AP | mol H+ eq | 9,689E+00 | 2,620E+00 | 1,930E-01 | 2,163E-01 | 3,085E-02 | 6,956E-02 | 2,661E-03 | -4,444E+00 |
| EP - freshwater | kg P eq | 8,870E-01 | 1,038E-02 | 8,662E-03 | 7,001E-04 | 5,832E-04 | 3,671E-03 | 3,119E-05 | -4,333E-01 |
| EP - marine | kg N eq | 2,091E+00 | 6,001E-01 | 1,083E-01 | 1,003E-01 | 1,107E-02 | 1,152E-02 | 1,014E-03 | -1,002E+00 |
| EP - terrestrial | mol N eq | 2,234E+01 | 6,666E+00 | 6,839E-01 | 1,099E+00 | 1,205E-01 | 1,212E-01 | 1,107E-02 | -1,032E+01 |
| WDP | m ³ depriv. | 4,561E+02 | 6,030E+00 | 1,966E+01 | 6,793E-01 | 5,922E-01 | 1,138E+00 | 4,026E-01 | -1,998E+02 |
| ADP - F | MJ | 2,352E+04 | 1,430E+03 | 2,408E+03 | 3,136E+02 | 1,242E+02 | 2,325E+02 | 9,210E+00 | -1,081E+04 |
| ADP - MM | kg Sb eq | 1,763E-02 | 1,694E-04 | 5,781E-05 | 8,552E-06 | 2,315E-05 | 9,488E-06 | 5,869E-07 | -7,129E-03 |
| PERE | MJ | 2,74E+03 | 5,62E+01 | 8,90E+01 | 2,34E+00 | 2,44E+00 | 1,31E+01 | 1,12E-01 | -1,20E+03 |
| 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 |
| PERT | MJ | 2,74E+03 | 5,62E+01 | 8,90E+01 | 2,34E+00 | 2,44E+00 | 1,31E+01 | 1,12E-01 | -1,20E+03 |
| PENRE | MJ | 2,93E+04 | 1,40E+03 | 2,50E+03 | 3,09E+02 | 1,23E+02 | 2,46E+02 | 9,13E+00 | -1,34E+04 |
| PENRM | 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 |
| PENRT | MJ | 2,93E+04 | 1,40E+03 | 2,50E+03 | 3,09E+02 | 1,23E+02 | 2,46E+02 | 9,13E+00 | -1,34E+04 |
| SM | kg | 2,48E+02 | 6,77E-01 | 2,92E-01 | 1,32E-01 | 0,00E+00 | 2,39E-02 | 2,29E-03 | -1,83E+02 |
| 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 |
| 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 |
| FW | m ³ | 1,46E+01 | 1,93E-01 | 4,93E-01 | 2,21E-02 | 2,30E-02 | 5,02E-02 | 9,57E-03 | -1,17E+01 |
| HW | kg | 8,76E+01 | 1,01E+00 | 1,39E+00 | 2,17E-01 | 0,00E+00 | 1,03E-01 | 1,04E-02 | -5,92E+01 |
| NHW | kg | 6,56E+02 | 3,41E+00 | 3,29E+00 | 9,34E-01 | 0,00E+00 | 3,99E-01 | 1,02E-01 | -3,86E+02 |
| RW | kg | 1,47E-01 | 1,65E-03 | 3,03E-03 | 3,64E-04 | 0,00E+00 | 1,85E-04 | 1,51E-05 | -8,11E-02 |
| REUSE | 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 |
| RECYCLE | kg | 6,15E+00 | 1,01E+00 | 3,54E-01 | 2,18E-01 | 0,00E+00 | 3,18E-02 | 3,72E-03 | -5,03E+02 |
| EN - REC | 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 |
| EE - E | 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 |
| EE - T | 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 |

PLATE PROCESSINGS

| ID | U.o.M. | A1 | A2 | A3 | C1 | C2 | C3 | C4 | D |
|------------------|------------------------|------------|-----------|------------|-----------|-----------|------------|-----------|------------|
| GWP - t | kg CO ₂ eq | 2,608E+03 | 1,218E+02 | 3,209E+02 | 2,398E+01 | 8,559E+00 | 1,610E+01 | 3,759E-01 | -1,013E+03 |
| GWP - fossil | kg CO ₂ eq | 2,607E+03 | 1,216E+02 | 3,218E+02 | 2,397E+01 | 8,552E+00 | 1,611E+01 | 3,757E-01 | -1,012E+03 |
| GWP - biogenic | kg CO ₂ eq | -7,346E-01 | 1,618E-01 | -9,256E-01 | 2,619E-03 | 4,429E-03 | -1,550E-02 | 5,178E-05 | -8,889E-01 |
| GWP - luluc | kg CO ₂ eq | 9,696E-01 | 9,641E-02 | 5,918E-02 | 2,081E-03 | 2,936E-03 | 1,467E-03 | 1,934E-04 | -4,897E-01 |
| GWP - GHG | kg CO ₂ eq | 2,607E+03 | 1,216E+02 | 3,218E+02 | 2,397E+01 | 8,552E+00 | 1,611E+01 | 3,757E-01 | -1,012E+03 |
| ODP | kg CFC-11 eq | 1,084E-05 | 1,726E-06 | 1,199E-05 | 3,669E-07 | 1,725E-07 | 2,500E-07 | 1,086E-08 | -4,854E-06 |
| POCP | kg NMVOC eq | 8,028E+00 | 2,019E+00 | 1,034E+00 | 3,276E-01 | 4,938E-02 | 4,542E-02 | 3,967E-03 | -3,299E+00 |
| AP | mol H+ eq | 1,050E+01 | 2,840E+00 | 4,368E-01 | 2,163E-01 | 3,085E-02 | 6,956E-02 | 2,661E-03 | -4,246E+00 |
| EP - freshwater | kg P eq | 9,614E-01 | 1,125E-02 | 2,253E-02 | 7,001E-04 | 5,832E-04 | 3,671E-03 | 3,119E-05 | -4,140E-01 |
| EP - marine | kg N eq | 2,266E+00 | 6,504E-01 | 2,649E-01 | 1,003E-01 | 1,107E-02 | 1,152E-02 | 1,014E-03 | -9,574E-01 |
| EP - terrestrial | mol N eq | 2,421E+01 | 7,225E+00 | 1,610E+00 | 1,099E+00 | 1,205E-01 | 1,212E-01 | 1,107E-02 | -9,855E+00 |
| WDP | m ³ depriv. | 4,943E+02 | 6,536E+00 | 5,142E+01 | 6,793E-01 | 5,922E-01 | 1,138E+00 | 4,026E-01 | -1,909E+02 |
| ADP - F | MJ | 2,549E+04 | 1,550E+03 | 4,989E+03 | 3,136E+02 | 1,242E+02 | 2,325E+02 | 9,210E+00 | -1,033E+04 |
| ADP - MM | kg Sb eq | 1,911E-02 | 1,836E-04 | 1,452E-04 | 8,552E-06 | 2,315E-05 | 9,488E-06 | 5,869E-07 | -6,811E-03 |
| PERE | MJ | 2,97E+03 | 6,09E+01 | 1,58E+02 | 2,34E+00 | 2,44E+00 | 1,31E+01 | 1,12E-01 | -1,15E+03 |
| 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 |
| PERT | MJ | 2,97E+03 | 6,09E+01 | 1,58E+02 | 2,34E+00 | 2,44E+00 | 1,31E+01 | 1,12E-01 | -1,15E+03 |
| PENRE | MJ | 3,18E+04 | 1,51E+03 | 5,16E+03 | 3,09E+02 | 1,23E+02 | 2,46E+02 | 9,13E+00 | -1,28E+04 |
| PENRM | 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 |
| PENRT | MJ | 3,18E+04 | 1,51E+03 | 5,16E+03 | 3,09E+02 | 1,23E+02 | 2,46E+02 | 9,13E+00 | -1,28E+04 |
| SM | kg | 2,69E+02 | 7,34E-01 | 1,99E+00 | 1,32E-01 | 0,00E+00 | 2,39E-02 | 2,29E-03 | -1,75E+02 |
| 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 |
| 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 |
| FW | m ³ | 1,58E+01 | 2,09E-01 | 1,10E+00 | 2,21E-02 | 2,30E-02 | 5,02E-02 | 9,57E-03 | -1,12E+01 |
| HW | kg | 9,50E+01 | 1,10E+00 | 6,21E+00 | 2,17E-01 | 0,00E+00 | 1,03E-01 | 1,04E-02 | -5,65E+01 |
| NHW | kg | 7,10E+02 | 3,69E+00 | 1,19E+01 | 9,34E-01 | 0,00E+00 | 3,99E-01 | 1,02E-01 | -3,69E+02 |
| RW | kg | 1,59E-01 | 1,79E-03 | 1,49E-02 | 3,64E-04 | 0,00E+00 | 1,85E-04 | 1,51E-05 | -7,75E-02 |
| REUSE | 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 |
| RECYCLE | kg | 6,67E+00 | 1,09E+00 | 9,83E-01 | 2,18E-01 | 0,00E+00 | 3,18E-02 | 3,72E-03 | -4,81E+02 |
| EN - REC | 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 |
| EE - E | 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 |
| EE - T | 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 |



Additional information

HEAVY PLATE

The slabs are the main element for HR steel heavy plates production. Their impact is estimated 95% of the full production. The rolling process by means of rolling counts 5%, where the main role is played by natural gas used during the hot-roll process (6%).

PLATE PROCESSINGS

The analysis run on the values rising from further plates processing show the above mention impact do not vary much. Albeit the plates can be submitted to various processings neither the normalisation nor thermic treatments impact over 4% while other mechanical machining stand below 1% .

SUSTAINABILITY

It is worth to highlight that heavy plates at the end of their life span can be recycled to a very high extent. In particular the quantity of steel recycled is 88% in full compliance with the "Special Waste Report" ISPRA - n° 402/2024 requirements.

MANAGEMENT SYSTEM

With reference to the management systems used by the company, we highlight how the presence of an environmental (certified according to ISO 14001:2015) and safety (certified according to ISO 45001:2018) management system testify to the company's commitment to pursue the continuous improvement of its environmental and safety performance, for example by properly managing hazardous substances, the waste produced by its activity as well as to maintain the pollutants emitted into the atmosphere as well as water discharges. Within the environmental management system, there is also a special data management procedure to study the life cycle of products. Year after year, the company plans new improvement objectives aimed at increasing its performance. The company has implemented an energy management system certified in accordance with the standard ISO 50001:2018 to identify the most relevant systems in terms of energy as well as defining opportunities for improvement in order to reduce over time the energy consumption determined by the performance of its activity.

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