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ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025:2006
and EN 15804:2012+A2:2019/AC:2021 for:

Rails

from:

Třinecké železárny, a.s.

PROGRAMME	PROGRAMME OPERATOR
"National Environmental Labeling Program" – Czech Republic (NPEZ)	Ministry of the Environment of the Czech Republic, CENIA, Czech Environmental Information Agency, executive function of the NPEZ Agency

EPD REGISTRATION NUMBER:	PUBLICATION DATE:	UPDATE DATE:	VALID UNTIL:
3015-EPD-7240006	2024-05-07	2025-06-16	2029-05-06

An EPD should provide current information and may be updated if conditions change.

GENERAL INFORMATION

PROGRAMME INFORMATION

PROGRAMME	"National Environmental Labeling Program" – Czech Republic (NPEZ)
ADDRESS	Ministry of the Environment of the Czech Republic Department of Voluntary Instruments 100 10 Praha 10, Vršovická 1442/65
WEBSITE	www.mzp.cz, www.cenia.cz
E-MAIL	info@mzp.cz

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): **Sustainability of construction works – Environmental product declarations - Core rules for the product category of construction products,** ČSN EN 15804+A2 serves as basic PCR
Life Cycle Assessment (LCA)
LCA accountability:
The Technical and Test Institute for Construction Prague, SOE, branch Ostrava, U Studia 14, 700 30 Ostrava
The Technical and Test Institute for Construction Prague, SOE, branch Plzeň, Zahradní 15, 326 00 Plzeň

Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

EPD verification by accredited verifier.

Third-party verification: **Elektrotechnický zkušební ústav, s. p.** is an approved verifier accountable for the third-party verification – Pod lisem 129/2, Troja, 182 00 Prague 8, CZ

Verifier is accredited by: **Českým institutem pro akreditaci, o.p.s., Certificate no. 522/2023**

Procedure for follow-up of data during EPD validity involves third party verifier:

☐ Yes ☒ No

This document is a translation of the EPD issued in Czech. In cause of doubt use the Czech version of this EPD as a reference.

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

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.

COMPANY INFORMATION

OWNER OF THE EPD

TŘINECKÉ ŽELEZÁRNY, a.s.

CONTACT:
Ing. Robert Zvoníček

DESCRIPTION OF THE ORGANISATION

TŘINECKÉ ŽELEZÁRNY, a.s. (hereinafter referred to as TŽ) is a part of the TŘINECKÉ ŽELEZÁRNY - MORAVIA STEEL (hereinafter referred to as TŽ-MS) group. The group consists of approximately 30 companies that focus on the production of long steel products and seamless tubes (TŽ) and usually the processing of these products. The main 15 production companies of the TŽ-MS group employ 13 thousand employees, the TŽ company itself has almost 7 thousand employees. The TŽ-MS Group produces approximately 2,5 million tonnes of steel annually, which is used mainly in the automotive, mechanical engineering, railway and construction industries, as well as in the energy and consumer goods industries.

The largest manufacturing company is TŽ, which produces rolled wire rod, steel bars, rails, semi-finished products, drawn steel, seamless tubes and rail fastening system components. Flat-bottom rails are mostly supplied to the European market according to EN 13674-1 and to the North American market according to NS RT 01 and CN 12-16-D. In addition, customers who purchase rails require compliance with the terms of their own specifications and technical delivery conditions. TŽ produces approximately 230 thousand tonnes of rails annually.

Currently, TŽ mostly produces rail steel designated as R260. It has a minimum tensile strength of 880 MPa and an A5 elongation of at least 10%. The carbon content ranges from 0.6 to 0.8 %. Rails on more heavily loaded railway lines are alloyed with manganese (up to 1.3 %), silicon (up to 0.6 %) and other elements.

PRODUCT-RELATED OR MANAGEMENT SYSTEM-RELATED CERTIFICATIONS:

Product quality is ensured by an efficient and effective quality management system according to EN ISO 9001 and IATF 16949. TŽ-MS has an integrated management system in place, which also includes a certified environmental management system according to EN ISO 14001, an energy management system according to EN ISO 50001 and an occupational health and safety management system according to EN ISO 45001. Within the integrated management system, TŽ-MS has implemented a system for prevention of major accidents and sustainable business.

The rails are certified:

- for use in rail transport by Deutsche Bahn, DOSZT, INFRABEL, PKP Polskie Linie Kolejowe, Ricardo Certification, TSÚS, TZÚS, Urząd Transportu Kolejowego and VÚD.

NAME AND LOCATION OF PRODUCTION SITE(S):

TŘINECKÉ ŽELEZÁRNY, a.s.
Průmyslová 1000, Staré Město
739 61 Třinec, CZ

PRODUCT INFORMATION

PRODUCT NAME

Rails

PRODUCT IDENTIFICATION:

- Flat-bottom rails for main railway lines and metro systems
- Tram rails for urban line systems
- Switch rails for turnouts and track crossings
- Rails for mine and field track

PRODUCT DESCRIPTION

The steel for the rails is produced in basic oxygen furnaces by processing liquid pig iron from blast furnaces. The input semi-finished products to produce rails are usually cast square billets produced by continuous casting technology and subsequently heated to rolling temperature in a walking beam furnace. Less frequent is the use of semi-finished products - rectangular and round blooms and ingots heated in soaking pits. The actual production of the rails takes place in the Bloom and Heavy Section Rolling Mill, where the input semi-finished product is formed after heating to the final dimension in the Blooming mill and then in the Reversing mill.

After exiting the line, each rail is checked for dimension using continuous laser dimensional measurement in the hot stage and for surface quality using a high-speed camera system. Each rolled rail is then stamped with the Heat number, casting strand number and position in the casting strand, and other signs as required by standards and customer requirements. After cooling on the cooling bed, the rails are straightened in both horizontal and vertical directions on a disc straightener. After straightening, each rail passes through a measuring centre, which is equipped with laser equipment for continuous measurement of the straightness and dimensions of the rail in the cold stage, as well as a line for surface inspection and internal defects. The rails checked in this way are cut to the prescribed lengths on sawing and drilling machines and, if the customer requests, the ends of the rails are punched. The rail ends are then straightened, and the final output quality control is carried out.

LIFE EXPECTANCY:

The reference service life (RSL) for rails is not declared. It is common to estimate a service life (RSL) of 50 years for rails.

UN CPC CODE: 41253

GEOGRAPHICAL SCOPE:

The generic data used from the Ecoinvent database are used with validity for the Czech Republic (e.g. energy inputs) and in the event that data for the Czech Republic are not available, data valid for the EU or according to the location of the supplier are used. Based on the evaluation according to EN 15804+A2, Annex E, tab. E.1 the generic data used meet the quality level – medium.

PRODUCT PACKAGING:

The rails are usually transported on coupled railroad cars designed for this purpose. To secure the load of rails, many types of loadings use timber fixtures, for which a return is required. Bundling of individual rails with wire or tape is less common. Also, wood pads between individual layers of rails is not common for railroad cars loads, with the use of timber fixtures predominating.

ENVIRONMENT AND HEALTH DURING USE:

No special health protection measures beyond the legally specified industrial protection measures for production workers are required throughout the production process. Due to the areas of application of the product, no environmental impacts and no emissions to water, air or soil are expected.

LCA INFORMATION

FUNCTIONAL UNIT / DECLARED UNIT

The declared unit is 1 t of the average manufactured product – Rails

DESIGNATION	UNIT	VALUE
Declared unit	t	1
Conversion factor to 1 kg	kg	1000
Average bulk weight	kg/m^3	7850

REFERENCE SERVICE LIFE:

The reference service life (RSL) for rails is not declared. It is common to estimate a service life (RSL) of 50 years for rails.

TIME REPRESENTATIVENESS:

For specific data, the manufacturer's data for the year **2022** is used. For generic data, data from the Ecoinvent database version 3.9.1 is used. Based on the evaluation according to EN 15804+A2, Annex E, tab. E.1 the generic data used meet the quality level – very good.

DATABASE(S) AND LCA SOFTWARE USED:

The source of input data was operational data obtained from the organization recorded in the SAP information system, as well as outputs from monitoring and measurement of waste production and emissions.

SimaPro calculation software, version 10.1. SimaPro Analyst, Ecoinvent database version 3.9.1.

DESCRIPTION OF SYSTEM BOUNDARIES

Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D)

The production phase includes the following modules:

- **A1** – extraction and processing of raw materials and production of packaging from input raw materials.
- **A2** – transport of input raw materials from the supplier to the manufacturer, waste removal.
- **A3** – production of products, production of auxiliary materials and semi-finished products, energy consumption, including waste processing until reaching a state where it ceases to be waste or after removal of the last material residues during the production phase.

The end-of-life phase includes modules:

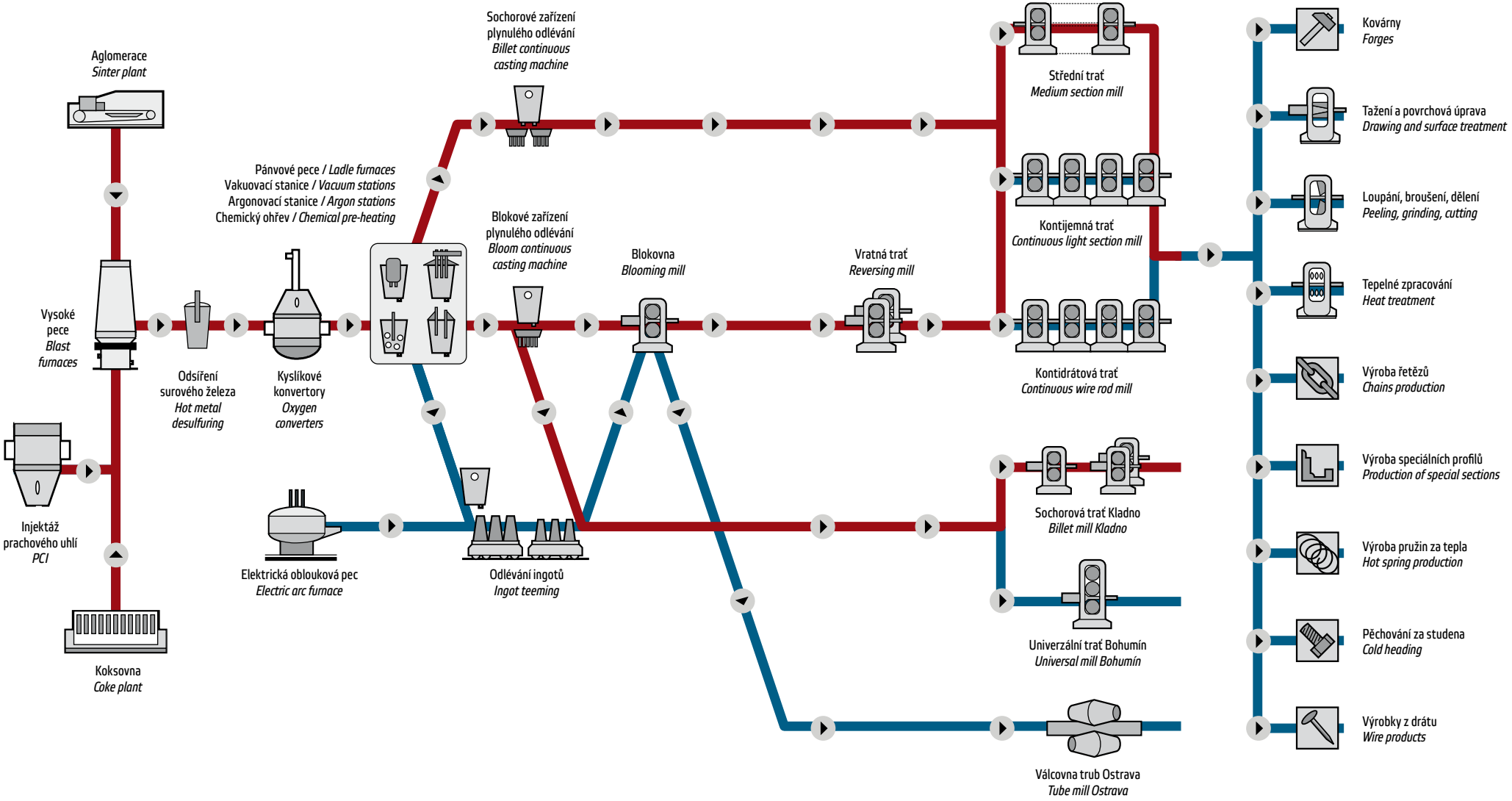
- **C1**, deconstruction, decomposition, dismantling and demolition of the rail as considered as dismantling the rail by means of a petrol tightening machine and subsequent cutting of the rail into segments.
- **C2**, transport to the waste treatment site; transport of the discarded product within the waste treatment, e.g. to the recycling site, and transport of the waste, e.g. to the final disposal site, is considered as transport to a recycling centre at 50 km.
- **C3**, processing waste for recycling. A scenario where 100 % of the product can be recycled as scrap steel is envisaged.
- **C4**, waste disposal. A scenario is assumed where 0 % of the product is disposed of in landfill as inert waste.

Benefits and costs beyond the product system boundary are presented in module D.

Module D includes:

- **D**, the potential for reuse, recovery and/or recycling, expressed in terms of net impacts or benefits. In the Module D scenario, savings of primary raw material inputs (without considering transport and energy) in the same product system (steel production) are taken into account.

SYSTEM DIAGRAM



MORE INFORMATION:

Information modules **A4** and **A5** from the construction phase were not included in the LCA due to the difficult availability of input data and is therefore not declared.

Information modules from the use phase **B1** to **B7** are also not declared, as these types of products, assuming correct use, do not require maintenance, repair or replacement during the normal lifetime in the use phase. Those products also do not require energy or water consumption during the use phase.

For the study, all operational data related to the consumption of main and auxiliary materials for the production of the product, energy data, diesel consumption and the distribution of annual waste production and emissions according to plant records were taken. In terms of produced waste, only those wastes that are clearly related to production activities were included in the analysis.

The processes required for the installation of production equipment and the construction of infrastructure were not included in the analysis. Also, administrative processes are not included – inputs and outputs are balanced per production phase.

MODULES DECLARED, GEOGRAPHICAL SCOPE, SHARE OF SPECIFIC DATA (IN GWP-GHG RESULTS) AND DATA VARIATION (IN GWP-GHG RESULTS):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	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
Geography	GLO	GLO, EU	CZ										EU	EU	EU	EU	GLO, EU
Specific data used	> 95 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-

The data used to calculate the EPD conforms to the following principles:

Technological point of view: Data corresponding to the current production of individual types of partial products of the plant and corresponding to the current state of the technologies used are used.

Based on the evaluation according to EN 15804+A2, Annex E, tab. E.1 the generic data used meet the quality level – very good.

The aspect of completeness and completeness: Most of the input data is based on consumption balances, which are precisely recorded in the manufacturer's information system. The reliability of the source of specific data is determined by the uniformity of the collection methodology of the information system.

Consistency point of view: Uniform points of view are used throughout the report (allocation rules, age of data, technological scope of validity, temporal scope of validity, geographical scope of validity).

Credibility aspect: All important data were checked for adherence to cross-comparison of mass balances.

CONTENT INFORMATION

Product components	Weight %	Post-consumer material, weight-%	Biogenic carbon content in kg C/DU
Steel	100	23	0
TOTAL	100	23	0
Percentage of scrap added to steelmaking inputs	26.67	–	–
Packaging materials	**Weight %**	**Weight-% (versus the product)**	**Biogenic carbon content in kg C/DU**
Metallic tapes	24.21	0.101	0.00
Plastic	0.03	0.000	0.00
Wood	75.77	0.315	1.41
TOTAL	100.00	0.42	1.41
Dangerous substances from the candidate list of SVHC for Authorisation	**EC No.**	**CAS No.**	**Weight-% per functional or declared unit (DU)**
They are not	–	–	–

Substances listed on the list of substances of very high concern subject to authorization by the European Chemicals Agency are not contained in the product in declarable quantities.

RESULTS OF THE ENVIRONMENTAL PERFORMANCE INDICATORS

MANDATORY IMPACT CATEGORY INDICATORS ACCORDING TO EN 15804:2012+A2:2019/AC:2021

Results per functional or declared unit

Indicator	Unit	A1–A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-fosil	kg CO_2 ekv.	2.50E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.35E+02	6.25E+00	3.85E+01	0.00E+00	-4.49E+02
GWP-biogenic	kg CO_2 ekv.	4.59E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.76E-01	2.36E-03	3.17E+01	0.00E+00	-2.47E-02
GWP-luluc	kg CO_2 ekv.	1.04E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.31E-02	4.21E-03	1.54E-02	0.00E+00	-1.96E-01
GWP-total	kg CO_2 ekv.	2.55E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.35E+02	6.26E+00	7.02E+01	0.00E+00	-4.49E+02
ODP	kg CFC 11 ekv.	1.99E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.40E-06	1.13E-07	3.86E-07	0.00E+00	-5.86E-06
AP	mol H^+ ekv.	1.24E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.80E-01	5.78E-02	1.31E-01	0.00E+00	-2.79E+00
EP-freshwater	kg P ekv.	7.64E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.42E-01	7.14E-04	5.89E-03	0.00E+00	-7.13E-02
EP-marine	kg N ekv.	2.64E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.81E-01	2.58E-02	3.90E-02	0.00E+00	-6.76E-01
EP-terrestrial	mol N ekv.	2.65E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.74E+00	2.80E-01	4.29E-01	0.00E+00	-7.58E+00
POCP	kg NMVOC ekv.	9.28E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.12E-01	8.14E-02	1.33E-01	0.00E+00	-3.29E+00
ADP-minerals&metals*	kg Sb ekv.	5.13E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.50E-05	1.29E-05	4.38E-04	0.00E+00	-2.45E-04
ADP-fosil*	MJ	3.44E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.10E+03	7.63E+01	2.73E+02	0.00E+00	-2.76E+03
WDP*	m^3	2.88E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.25E+01	4.00E-01	2.76E+00	0.00E+00	-1.89E+01
Acronyms	**GWP-fossil** = Global Warming Potential fossil fuels; **GWP-biogenic** = Global Warming Potential biogenic; **GWP-luluc** = Global Warming Potential land use and land use change; **ODP** = Depletion potential of the stratospheric ozone layer; **AP** = Acidification potential, Accumulated Exceedance; **EP-freshwater** = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; **EP-marine** = Eutrophication potential, fraction of nutrients reaching marine end compartment; **EP-terrestrial** = Eutrophication potential, Accumulated Exceedance; **POCP** = Formation potential of tropospheric ozone; **ADP-minerals&metals** = Abiotic depletion potential for non-fossil resources; **ADP-fossil** = Abiotic depletion for fossil resources potential; **WDP** = Water (user) deprivation potential, deprivation-weighted water consumption															

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

ADDITIONAL MANDATORY AND VOLUNTARY IMPACT CATEGORY INDICATORS

Results per functional or declared unit

Indicator	Unit	A1–A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[1]	kg CO_2 ekv.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PM	Disease incidence	1.41E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.26E-05	6.33E-07	2.15E-06	0.00E+00	-4.86E-05
IRP	kBq U235 ekv.	1.56E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.30E+01	1.37E-01	3.49E+00	0.00E+00	-1.13E+01
ETP-fw	CTUe	6.35E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.01E+02	2.98E+01	2.06E+02	0.00E+00	-7.46E+02
HTP-c	CTUh	1.48E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.10E-08	2.32E-09	1.34E-08	0.00E+00	-1.10E-06
HTP-nc	CTUh	4.25E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.94E-07	4.02E-08	2.28E-07	0.00E+00	-2.10E-05
SQP	dimensionless	5.38E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.60E+02	4.09E+01	1.01E+03	0.00E+00	-6.76E+02
Acronyms	**GWP-GHG** = this indicator includes all greenhouse gases except biogenic uptake and emissions of carbon dioxide and biogenic carbon stored in the product; as such the indicator is identical to GWP-total except that the CF for biogenic CO 2 is set to zero, **PM** = Potential incidence of disease due to PM emissions, **IRP** = Potential Human exposure efficiency relative to U235, **ETP-fw** = Potential Comparative Toxic Unit for ecosystems, **HTP-c** = Potential Comparative Toxic Unit for humans, **HTP-nc** = Potential Comparative Toxic Unit for humans, **SQP** = Potential soil quality index															

[1] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO2 is set to zero.

RESOURCE USE INDICATORS

Results per functional or declared unit

Indicator	Unit	A1–A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1.42E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.99E+01	2.09E+00	8.72E+01	0.00E+00	-1.24E+02
PERM	MJ	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.42E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.99E+01	2.09E+00	8.72E+01	0.00E+00	-1.24E+02
PENRE	MJ	3.63E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.23E+03	8.11E+01	2.88E+02	0.00E+00	-2.92E+03
PENRM	MJ	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	3.63E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.23E+03	8.11E+01	2.88E+02	0.00E+00	-2.92E+03
SM	kg	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	2.38E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acronyms	**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 re-sources; **SM** = Use of secondary material; **RSF** = Use of renewable secondary fuels; **NRSF** = Use of non-renewable secondary fuels; **FW** = Use of net fresh water															

ADDITIONAL ENVIRONMENTAL INFORMATION – WASTE INDICATORS

Results per functional or declared unit															
Indicator	**Unit**	**A1–A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	4.47E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste disposed	kg	4.77E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	5.00E+01	0.00E+00
Radioactive waste disposed	kg	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ADDITIONAL ENVIRONMENTAL INFORMATION – OUTPUT FLOW INDICATORS

Results per functional or declared unit															
Indicator	**Unit**	**A1–A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	3.20E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	1.00E+03	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

The result tables shall only contain values or the letters "ND" (Not Declared). It is not possible to specify ND for mandatory indicators. ND shall only be used for voluntary parameters that are not quantified because no data is available.

ADDITIONAL ENVIRONMENTAL INFORMATION

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AGGREGATION OF INFORMATION MODULES

The indicators declared in the individual product life cycle information modules A1 to A5, B1 to B7, C1 to C4 and module D, as described in the table on page 10, shall never be combined in any combination of individual information modules into a final sum or sub-sum of life cycle phases (allowed for A1-A3).

REFERENCES

ČSN ISO 14025:2010 Environmentální značky a prohlášení – Environmentální prohlášení typu III – Zásady a postupy (Environmental labels and declarations – Type III environmental declarations – Principles and procedures)

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Explanatory documents are available from the head of Technical Support of the EPD owner.

VERIFICATION EPD

INDEPENDENT VERIFICATION OF THE DECLARATION AND DATA ACCORDING TO ČSN ISO 14025:2010

CEN STANDARD EN 15804+A1 CEN SERVES AS THE CORE PCR[a]

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Third party verifier[b]:

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[a] Product category rules

[b] Optional for business-to-business communication, mandatory for business-to-consumer communication (see ISO 14025:2006,9.4)

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