

# ENVIRONMENTAL PRODUCT DECLARATION

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

## Continuously Cast Semi- finished Products – CCM1

from:

**Třinecké železářny, a.s.**



### PROGRAMME

"National Environmental Labeling Program"  
- Czech Republic (NPEZ)

### PROGRAMME OPERATOR

Ministry of the Environment of the Czech Republic, CENIA, Czech  
Environmental Information Agency, executive function of the NPEZ Agency

### EPD REGISTRATION NO.

3015-EPD-7240007

### PUBLICATION DATE

2024-10-31

### VALID UNTIL

2029-10-30

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

## GENERAL INFORMATION

### PROGRAMME INFORMATION

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

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### Third-party verification

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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**

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

Yes  No

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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 pipes (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 production company is TŽ, which produces wire rod, steel bars, rails, semi-finished products, drawn steel, seamless tubes and rail fastening system components. Semi-finished products include continuously cast blooms and billets, known as continuously cast steel, from CCM1. TŽ produces approximately 1 000 to 1 150 000 tonnes of continuously cast steel annually at CCM1.

### 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. Furthermore, TŽ-MS is preparing for the certification of the 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 sustainability.

CCM1 continuous cast semi-finished products are certified:

- for supply to the shipping industry by American Bureau of Shipping, BUREAU VERITAS, Československý Lloyd spol. s r.o., Det Norske Veritas, Lloyd's Register and Russian Marine Register
- for deliveries to the energy industry at PRI
- for the manufacture of pressure equipment by TÜV NORD and TÜV UK
- for rail production at Deutsche Bahn AG.

### NAME AND LOCATION OF PRODUCTION SITE(S):

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

## PRODUCT INFORMATION

### PRODUCT NAME

#### Continuously Cast Semi-finished Products – CCM1

##### PRODUCT IDENTIFICATION:

At present, TŽ mostly produces round continuously cast steel of the steel grade R73, 18CrNiMo7-6, 42CrMo4, LF2, R81 and ER81 and rectangular continuously cast steel for rails of the steel grade R260 and AREMA.

### PRODUCT DESCRIPTION

TŽ produces round continuously cast steel on CCM1 mainly for railway wheels of rolling stock and for rolled rings, used mostly in the Wind Power Industry. More than a quarter of the production of round continuously cast steel from CCM1 goes to TŽ's billet mill in Kladno. In addition, CCM1 produces approximately one-third of the production in rectangular bloom of continuously cast steel, of which approximately 40 % is processed in the reversing mill at TŽ to produce rails and 60 % of the rectangular blooms are rolled in the reversing mill into billets as input material for TŽ's rolling mills.

##### INTENDED USE:

The CCM1 continuously cast steel produced in TŽ are generally used in the production of railway wheels, rails, billets and seamless rings for the Wind power industry. For rolling mills and forging plants, CCM1 continuously cast steel is the input material that is subsequently transformed into final steel products.

##### LIFE EXPECTANCY:

The reference service life (RSL) for **Continuously Cast Semi-finished Products – CCM1** is not declared.

##### UN CPC CODE:

41122

##### 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:

Products are supplied in accordance with the standards specified in the product description. The majority of the products are loaded onto rail cars with reusable sleepers for transport.

##### ENVIRONMENT AND HEALTH DURING USE:

During the entire production process, it is not necessary to take any special health protection measures beyond the legally specified industrial protection measures for production employees.

## LCA INFORMATION

### FUNCTIONAL UNIT / DECLARED UNIT

The declared unit is 1 t of the average manufactured product  
- Continuously Cast Semi-finished Products - CCM1

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

#### REFERENCE SERVICE LIFE:

The reference lifetime is not declared. These are semi-finished products for further processing with many different application purposes. Service life is limited by the life of the product where the product is used.

#### 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 9.5 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:

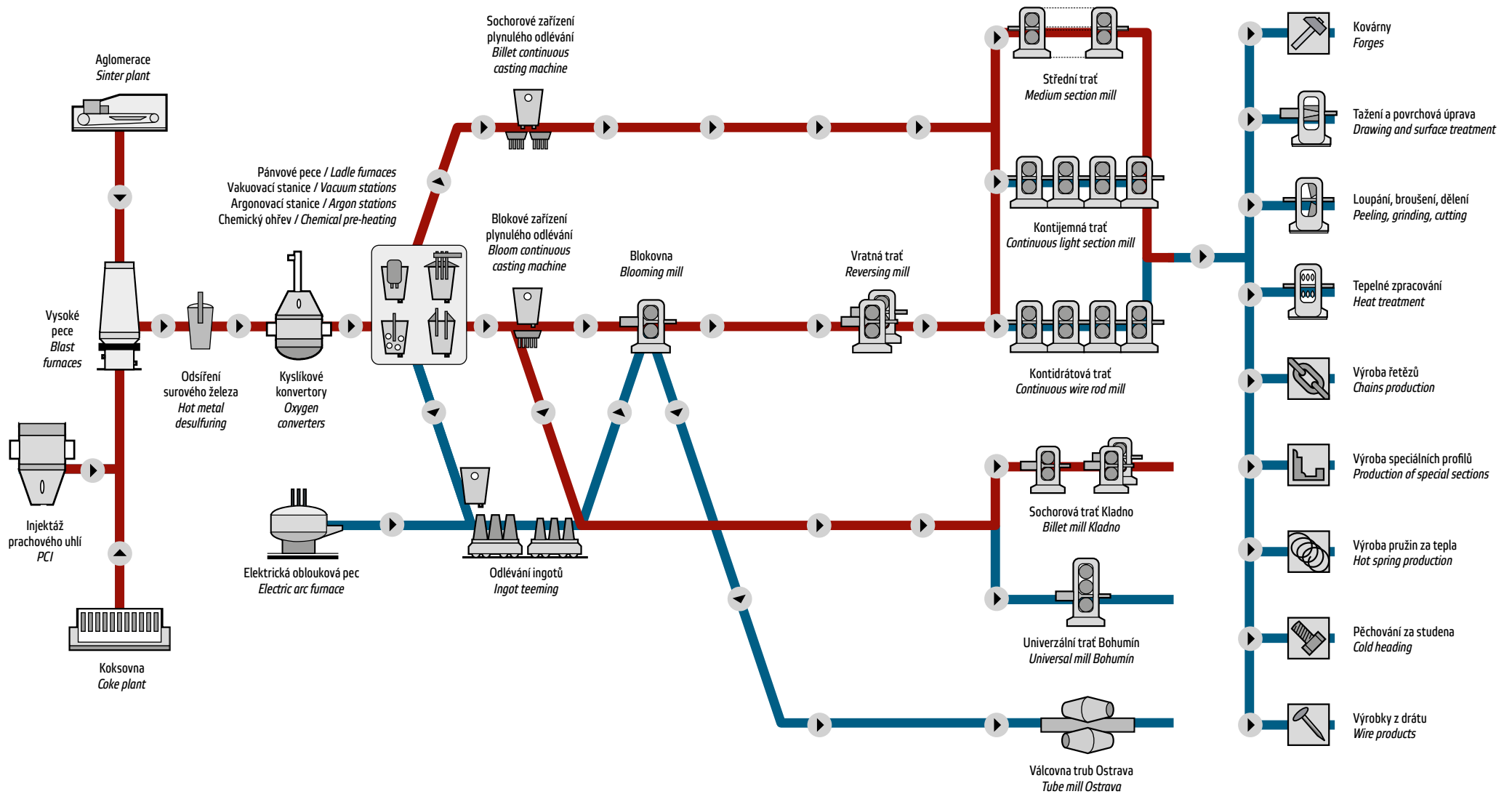
- **C1**, deconstruction, decomposition, dismantling and demolition of the product is not considered for this product because it is a semi-finished product with a homogeneous composition and intended for further processing. In this case, it is assumed that the environmental impact in this module can be neglected (is zero).
- **C2**, transport to a waste treatment site; transport of the discarded product within the waste treatment process, e.g. to a recycling site; and transport of the waste, e.g. to a final disposal site. Given that the product is used as a semifinished product for the production of final products, transport is not considered here.
- **C3**, processing waste for recycling. A scenario where 100% of the product (even in the form of semifinished product) can be recycled as scrap steel is envisaged.
- **C4**, waste disposal is not foreseen.

**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 life time in the use phase and also because these products are semi-finished products for further processing. 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
<b>Module</b>	<b>A1</b>	<b>A2</b>	<b>A3</b>	<b>A4</b>	<b>A5</b>	<b>B1</b>	<b>B2</b>	<b>B3</b>	<b>B4</b>	<b>B5</b>	<b>B6</b>	<b>B7</b>	<b>C1</b>	<b>C2</b>	<b>C3</b>	<b>C4</b>	<b>D</b>
Modules declared	x	x	x	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	x	x	x
Geography	GLO	GLO, EU	CZ												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

<b>Product components</b>	<b>Weight %</b>	<b>Post-consumer material, weight-%</b>	<b>Biogenic carbon content in kg C/DU</b>
Steel	100	23 %	0
<b>TOTAL</b>	<b>100</b>	<b>23 %</b>	<b>0</b>
Percentage of scrap added to steelmaking inputs	26,67	-	-
<b>Packaging materials</b>	<b>Weight %</b>	<b>Weight-% (versus the product)</b>	<b>Biogenic carbon content in kg C/DU</b>
Packaging materials are not used for the product	-	-	-
<b>Dangerous substances from the candidate list of SVHC for Authorisation</b>	<b>EC No.</b>	<b>CAS No.</b>	<b>Weight-% per functional or declared unit (DU)</b>
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-fossil	kg CO <sub>2</sub> ekv.	6,02E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,85E+01	0,00E+00	-4,49E+02
GWP-biogenic	kg CO <sub>2</sub> ekv.	-1,23E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,17E+01	0,00E+00	-2,47E-02
GWP-luluc	kg CO <sub>2</sub> ekv.	4,29E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,54E-02	0,00E+00	-1,96E-01
GWP-total	kg CO <sub>2</sub> ekv.	6,01E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7,02E+01	0,00E+00	-4,49E+02
ODP	kg CFC 11 ekv.	9,41E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,86E-07	0,00E+00	-5,86E-06
AP	mol H <sup>+</sup> ekv.	4,31E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,31E-01	0,00E+00	-2,79E+00
EP-freshwater	kg P ekv.	3,11E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5,89E-03	0,00E+00	-7,13E-02
EP-marine	kg N ekv.	9,73E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,90E-02	0,00E+00	-6,76E-01
EP-terrestrial	mol N ekv.	9,80E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,29E-01	0,00E+00	-7,58E+00
POCP	kg NMVOC ekv.	3,08E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,33E-01	0,00E+00	-3,29E+00
ADP-minerals&	kg Sb ekv.	2,88E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,38E-04	0,00E+00	-2,45E-04
metals*	MJ	1,29E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,73E+02	0,00E+00	-2,76E+03
ADP-fossil*	m <sup>3</sup>	1,42E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,76E+00	0,00E+00	-1,89E+01

**WDP\*** **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 <sup>1</sup>	kg CO <sub>2</sub> ekv.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PM	Disease incidence	5,81E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,15E-06	0,00E+00	-4,86E-05
IRP	kBq U235 ekv.	5,83E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,49E+00	0,00E+00	-1,13E+01
ETP-fw	CTUe	2,16E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,06E+02	0,00E+00	-7,46E+02
HTP-c	CTUh	2,86E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,34E-08	0,00E+00	-1,10E-06
HTP-nc	CTUh	6,05E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,28E-07	0,00E+00	-2,10E-05
SQP	bezrozměrný	1,92E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,01E+03	0,00E+00	-6,76E+02
Acronyms	<b>GWP-GHG</b> = 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 <sub>2</sub> is set to zero, <b>PM</b> = Potential incidence of disease due to PM emissions, <b>IRP</b> = Potential Human exposure efficiency relative to U235, <b>ETP-fw</b> = Potential Comparative Toxic Unit for ecosystems, <b>HTP-c</b> = Potential Comparative Toxic Unit for humans, <b>HTP-nc</b> = Potential Comparative Toxic Unit for humans, <b>SQP</b> = Potential soil quality index															

<sup>1</sup> 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 CO<sub>2</sub> 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	4,70E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8,72E+01	0,00E+00	-1,24E+02
PERM	MJ	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	4,70E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8,72E+01	0,00E+00	-1,24E+02
PENRE	MJ	1,37E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,88E+02	0,00E+00	-2,92E+03
PENRM	MJ	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,37E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,88E+02	0,00E+00	-2,92E+03
SM	kg	2,30E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00
FW	m <sup>3</sup>	4,70E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00
Acronyms	<p><b>PERE</b> = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; <b>PERM</b> = Use of renewable primary energy resources used as raw materials; <b>PERT</b> = Total use of renewable primary energy resources; <b>PENRE</b> = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; <b>PENRM</b> = Use of non-renewable primary energy resources used as raw materials; <b>PENRT</b> = Total use of non-renewable primary energy re-sources; <b>SM</b> = Use of secondary material; <b>RSF</b> = Use of renewable secondary fuels; <b>NRSF</b> = Use of non-renewable secondary fuels; <b>FW</b> = Use of net fresh water</p>															

**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	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	kg	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	kg	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	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	ND	ND	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	ND	ND	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 on page 12, 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)

ČSN EN 15804+A2:2020 Udržitelnost staveb – Environmentální prohlášení o produktu – Zásadní pravidla pro produktovou kategorii stavebních výrobků (Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products)

ČSN EN ISO 14040:2006 Environmentální management – Posuzování životního cyklu – Zásady a osnova (Environmental management – Life Cycle Assessment – Principles and Framework)

ČSN EN ISO 14044:2006 Environmentální management – Posuzování životního cyklu – Požadavky a směrnice (Environmental management – Life Cycle Assessment – Requirements and guidelines)

ČSN ISO 14063:2007 Environmentální management – Environmentální komunikace – Směrnice a příklady (Environmental management – Environmental communication – Guidelines and examples)

ČSN EN 15643-1:2011 Udržitelnost staveb – Posuzování udržitelnosti budov – Část 1: Obecný rámec (Sustainability of construction works – Sustainability assessment of buildings – Part 1: General framework)

ČSN EN 15643-2:2011 Udržitelnost staveb – Posuzování udržitelnosti budov – Část 2: Rámec pro posuzování environmentálních vlastností (Sustainability of construction works – Assessment of buildings – Part 2: Framework for the assessment of environmental performance)

ČSN EN 15942:2013 Udržitelnost staveb – Environmentální prohlášení o produktu – Formát komunikace mezi podniky (Sustainability of construction works – Environmental product declarations – Communication format business-to-business)

TNI CEN/TR 15941:2012 Udržitelnost staveb – Environmentální prohlášení o produktu – Metodologie výběru a použití generických dat (Sustainability of construction works – Environmental product declarations – Methodology for selection and use of generic data)

ČSN EN 16449:2014 Dřevo a výrobky na bázi dřeva – Výpočet obsahu biogenního uhlíku ve dřevě a přeměny na oxid uhličitý (Wood and wood-based products – Calculation of the biogenic carbon content of wood and conversion to carbon dioxide)

ILCD handbook – JRC EU, 2011

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Vyhláška č. 8/2021 Sb. Katalog odpadů – Katalog odpadů, (Decree No. 8/2021 Coll. Waste catalogue – Waste catalogue)

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Nařízení Evropského parlamentu a Rady (ES) č. 1272/2008 o klasifikaci, označování a balení látek a směsí, o změně a zrušení směrnic 67/548/EHS a 1999/45/ES a o změně nařízení (ES) č. 1907/2006 (nařízení CLP),

SimaPro LCA Package, Pré Consultants, the Netherlands, [www.pre-sustainability.com](http://www.pre-sustainability.com)

Ecoinvent Centre, [www.Ecoinvent.org](http://www.Ecoinvent.org)

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<sup>a</sup>

internal

external

Third party verifier<sup>b</sup>:

**ezú** elektrotechnický  
zkušební  
ústav

Elektrotechnický zkušební ústav, s. p.  
Pod lisem 129/2, Troja, 182 00 Praha 8, Česká republika

Mgr. Miroslav Sedláček – head of the certification body

Certification Body No. 3018 accredited by Czech Accreditation Institute, o.p.s. according to ČSN EN ISO/IEC 17065:2013, Certificate no. 522/2023.

<sup>a</sup> Product category rules

<sup>b</sup> Optional for business-to-business communication, mandatory for business-to-consumer communication (see ISO 14025:2006,9.4)

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

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