

# ENVIRONMENTAL PRODUCT DECLARATION

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

## Heat-treated Steel Bars – Kladno Billet Mill

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 NUMBER:

3015-EPD-7240008

### 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 manufacturing company is TŽ, which produces rolled wire, steel bars, rails, semi-finished products, drawn steel, seamless tubes and rail fastening system components.

Heat-treated steel bar is produced at the Medium mill as well as at the Light section mill located in Třinec and at the Billet mill in Kladno.

The production range of the VZ plant (Kladno Billet mill) includes round steel bar with a diameter of 70-300 mm, billets and blooms with a square cross-section of 70-320 mm and peeled steel with a diameter of 70-290 mm.

Heat-treated steel bar represents approximately 30% of the production of the billet mill.

### 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.

Round bars, billets and blooms and peeled bars are certified:

- for deliveries to the shipping industry with American Bureau of Shipping, BUREAU VERITAS, Det Norske Veritas, Lloyd's Register,
- for the production of railway axles, solid wheels, wheel bodies, wheelsets and rims at Deutsche Bahn,
- for the manufacture of pressure equipment by TÜV NORD and TÜV UK
- as structural steel at TZÚS and TÜV UK.

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

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

TŘINECKÉ ŽELEZÁRNY, a.s.,  
Sochorová válcovna,  
272 01 Kladno 1, CZ

## PRODUCT INFORMATION

### PRODUCT NAME

#### Heat-treated Steel Bars – Kladno Billet Mill

##### PRODUCT IDENTIFICATION:

Heat-treated round bars, dimensions 70-300 mm

Billets and blooms heat-treated, cross-section 70-320mm

Peeled bars heat-treated, diameter 70-290 mm

### PRODUCT DESCRIPTION

The production range of VZ (Kladno Billet Mill) includes round steel bars with a diameter of 70-300 mm, billets and blooms with a square cross-section of 70-320 mm and peeled steel with a diameter of 70-290 mm.

The production of the billet rolling mill follows the production of steel in TŽ, therefore it uses continuously cast semi-finished material from the CCM1 Operation or ingot as input material.

##### BASIC OPERATIONS AT THE BILLET MILL:

- heating of the input semi-finished product in the walking-beam furnace or soaking furnace
- rolling in the blooming mill
- rolling in the billet mill
- hot sawing
- cooling on a cooling bed
- deburring
- straightening
- inspection and measurement (defectoscopy and testing)
- heat treatment
- straightening
- inspection and measurement (defectoscopy and testing)
- marking, bundling and packaging
- dispatch and transport

The heat treatment operation consists of three refining and two annealing lines.

##### INTENDED USE:

Steel bar is most commonly used:

- in forging companies for hot or cold forgings
- in drawing mills for the production of bright steel
- for the production of bearings
- for the production of the cylinder
- for the manufacture of hydraulic cylinders and actuators
- for the manufacture of shafts for electric motors

which then go on to the following industries:

automotive industry, railway industry, mechanical engineering, power engineering, OCTG

##### LIFE EXPECTANCY:

The reference service life (RSL) for **Heat treated bars from the Kladno billet mill** is not declared.

##### UN CPC CODE:

41265

##### 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. Most of the products are transported by rail cars or trucks, and the individual products are suitably fixed.

##### 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 – Heat-treated Steel Bars – Kladno Billet Mill

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 service life (RSL) for black steel bar is not declared. These are products with many different application purposes. The service life is limited by the service life of the relevant structural and process units.

#### 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:

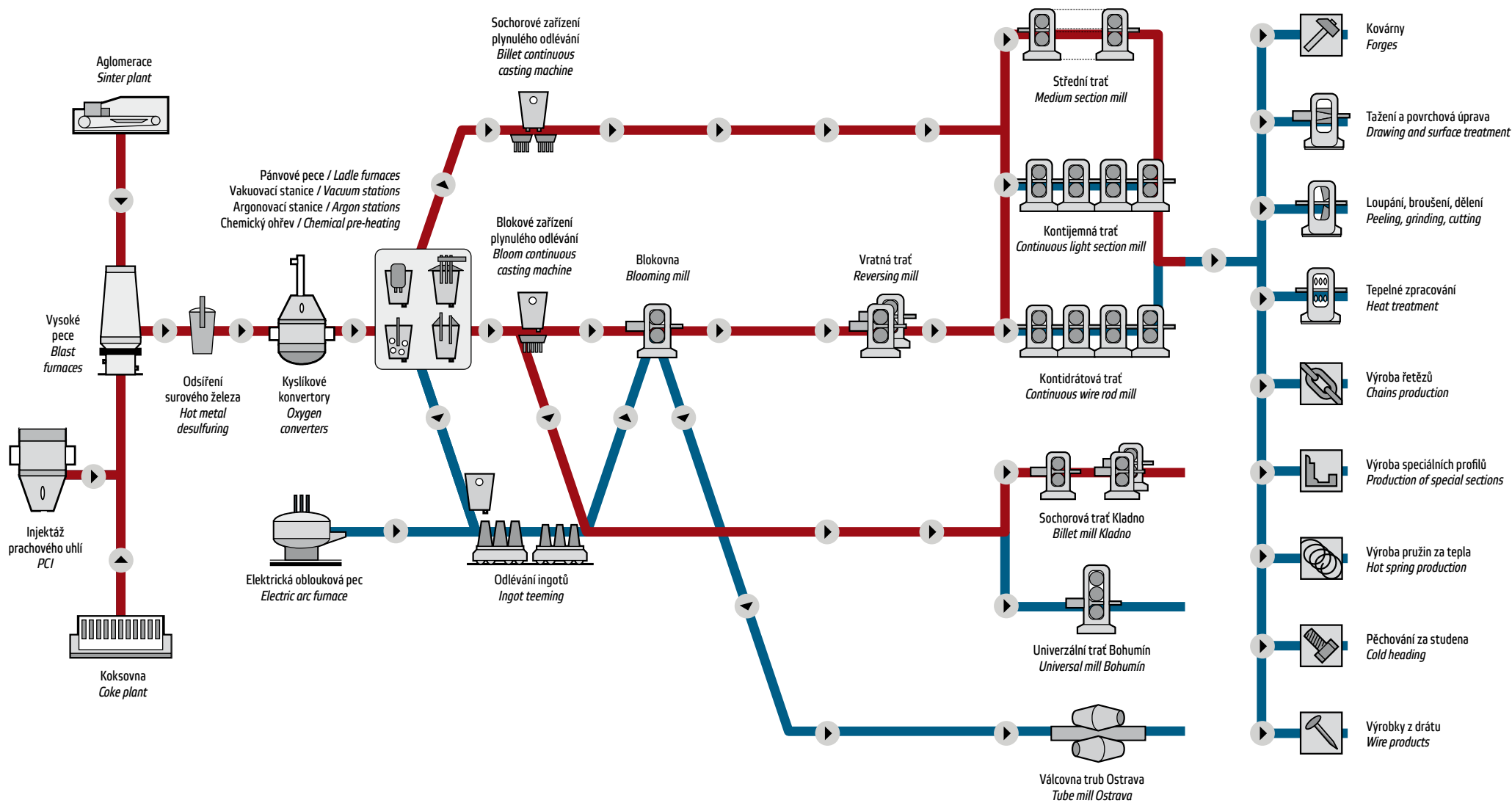
- **C1**, deconstruction, decomposition, dismantling and demolition of the product is not considered for this product because it is a semi-finished product with a homogeneous composition and intended for further processing. In this case, it is assumed that the environmental impact in this module can 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 can be recycled as scrap steel is envisaged.
- **C4**, waste disposal is not assumed, as no waste is generated during recycling.

**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
TOTAL	100	23	0
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>
Total metals (wire, cycle tape)	5.07	0.53	0
PES tapes	0.02	0.03	0
Wood total	94.91	0.00	2.34
TOTAL	100.00	0.56	2.34

<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.	1,15E+03	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.	-7,04E+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.	5,34E-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.	1,14E+03	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.	2,19E-05	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.	5,28E+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.	4,87E-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.	1,32E+00	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.	1,29E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,29E-01	0,00E+00	-7,58E+00
POCP	kg NMVOC ekv.	4,30E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,33E-01	0,00E+00	-3,29E+00
ADP-minerals&metals*	kg Sb ekv.	2,82E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,38E-04	0,00E+00	-2,45E-04
ADP-fossil*	MJ	1,86E+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>	1,70E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,76E+00	0,00E+00	-1,89E+01
WDP*	<p><b>GWP-fossil</b> = Global Warming Potential fossil fuels; <b>GWP-biogenic</b> = Global Warming Potential biogenic; <b>GWP-luluc</b> = Global Warming Potential land use and land use change; <b>ODP</b> = Depletion potential of the stratospheric ozone layer; <b>AP</b> = Acidification potential, Accumulated Exceedance; <b>EP-freshwater</b> = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; <b>EP-marine</b> = Eutrophication potential, fraction of nutrients reaching marine end compartment; <b>EP-terrestrial</b> = Eutrophication potential, Accumulated Exceedance; <b>POCP</b> = Formation potential of tropospheric ozone; <b>ADP-minerals&amp;metals</b> = Abiotic depletion potential for non-fossil resources; <b>ADP-fossil</b> = Abiotic depletion for fossil resources potential; <b>WDP</b> = Water (user) deprivation potential, deprivation-weighted water consumption</p>															

\* 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	6,37E-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.	1,10E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,49E+00	0,00E+00	-1,13E+01
ETP-fw	CTUe	2,55E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,06E+02	0,00E+00	-7,46E+02
HTP-c	CTUh	3,48E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,34E-08	0,00E+00	-1,10E-06
HTP-nc	CTUh	6,54E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,28E-07	0,00E+00	-2,10E-05
SQP	dimensionless	2,42E+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	5,66E+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	5,66E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8,72E+01	0,00E+00	-1,24E+02
PENRE	MJ	2,00E+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	2,00E+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>	5,46E-01	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	7,44E-03	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 in the table 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)

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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)

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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)

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Zákon č. 541/2020 Sb. v platném znění (Zákon o odpadech); Act No. 541/2020 Coll., as amended (Waste Act)

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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.  
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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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