

ENVIRONMENTAL PRODUCT DECLARATION

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

Seamless Steel Tubes

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-7240011

PUBLICATION DATE:

2024-11-11

VALID UNTIL:

2029-11-10

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 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 wire rod, steel bars, rails, semi-finished products, drawn steel, seamless tubes and rail fastening system components.

Seamless tubes are produced at the production unit VT-Tube Rolling Mill located in Ostrava Vítkovice.

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 API Spec. Q1. 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.

Seamless steel tubes are certified:

- for supplying the petrochemical industry by American Petroleum Institute and ZETOM,
- for supplying the shipping industry by BUREAU VERITAS, Czechoslovak Lloyd's, Det Norske Veritas, Lloyd's Register,
- for the manufacture of pressure equipment by TÜV NORD and TÜV UK,
- for use in construction, transport construction and engineering industry by TZÚS,
- as structural steel by TÜV NORD 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.,
Tube rolling mill,
Výstavní 1132,
706 02 Ostrava - Vítkovice, CZ

PRODUCT INFORMATION

PRODUCT NAME

Seamless Steel Tubes

PRODUCT IDENTIFICATION:

Mechanical tubes | Oils pipes | Hollow sections

PRODUCT DESCRIPTION

The seamless tubes are produced at the production unit VT-Tube Rolling Mill located in Ostrava Vítkovice in two rolling lines using the Mannesmann seamless tube production technology. The production range includes seamless tubes in the range of outer diameters from 60.3 to 406.4 mm with a wall thickness of 5 mm and above, made of both carbon and alloy steels, with an annual capacity of over 100 thousand tonnes.

INTENDED USE:

- Automotive – truck axles and frames, machined semi-finished products for automotive plants
- Engineering – pulleys for transport equipment and devices, stators of electric motors, frames and buffers of railcars, printing rollers, frames and guide pulleys of forklift trucks, booms of cranes
- Construction – micropiles, microriders and grouting, highway and bridge construction, pipelines, transmission towers and equipment, railway corridors, construction
- Chemical industry – Oil refineries
- Oil and gas production and geological research – underground gas reservoirs, pipeline pressure stations, central oil tank farms, components for the mining industry, geothermal wells

- Power engineering – power plants and heating plants – pipes for steam pipelines and chambers for their reconstruction and for the construction of new power plants and heating plants

LIFE EXPECTANCY:

The reference service life (RSL) for **Seamless Steel Tubes** is not declared.

UN CPC CODE:

41281, 41282, 41283, 41284

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:

Packaging and preservation of finished tubes is carried out according to the relevant standards and in accordance with customer requirements. The tubes are supplied unpreserved or with the outer surface of the tubes preserved with MM varnish and in the case of tubes shorter than 4 metres, otherwise the surface of the tubes is preserved with UV varnish. The preservation is carried out as a final operation on finished tubes. The tubes are supplied in bundles. In the bundle, they are bound with metal tape, possibly with a binding wire with at least two bindings, unless the customer has a different requirement.

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 – Seamless Steel Tubes

| 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 seamless steel tubes 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:

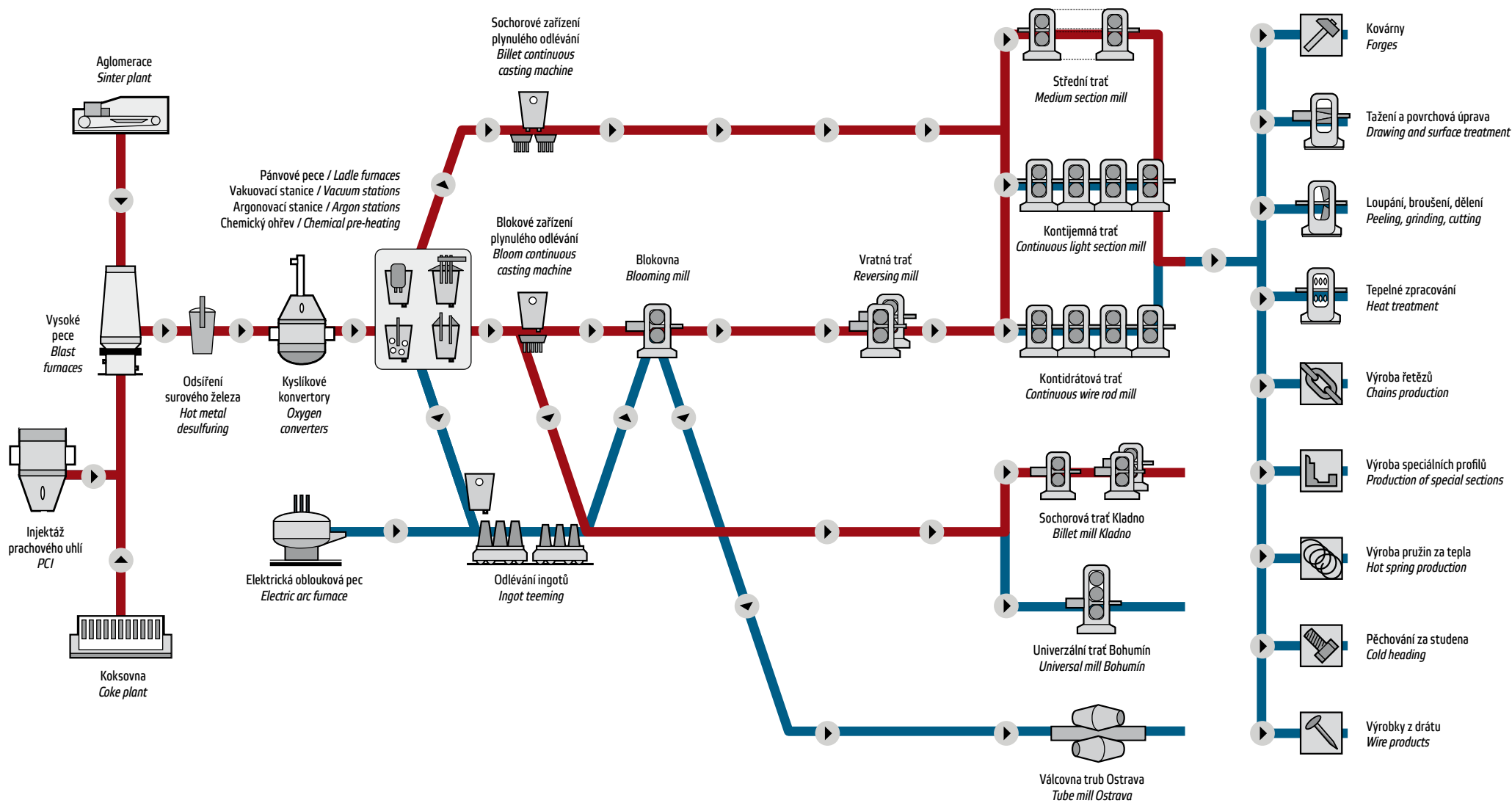
- **C1**, deconstruction, decomposition, dismantling and demolition of the product is not considered for this product because it is a semi-finished product with a homogeneous composition. In this case, it is assumed that the environmental impact in this module can be neglected (is zero).
- **C2**, transport 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 the final disposal site, is considered as transport to a recycling centre at a distance of 50 km and to a landfill also at a distance of 50 km.
- **C3**, processing waste for recycling. A scenario where 95% of the product can be recycled as scrap steel is envisaged.
- **C4**, waste disposal. A scenario is assumed where 5% 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 life time 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 |
| Metal - tape | 17.06 | 0.078 | 0.00 |
| Plastic - pipe end protection with bevel | 0.42 | 0.002 | 0.00 |
| Wood - spacers for dispatching on wagons and LKWs | 82.52 | 0.379 | 1.69 |
| TOTAL | 100.00 | 0.459 | 1.69 |

| 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-fossil | kg CO ₂ ekv. | 8.79E+02 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.90E+01 | 2.52E+01 | 3.17E-01 | -4.26E+02 |
| GWP-biogenic | kg CO ₂ ekv. | -4.76E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.78E-02 | -4.18E-01 | 1.93E-04 | -2.34E-02 |
| GWP-luluc | kg CO ₂ ekv. | 4.67E-01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 9.19E-03 | 3.64E-02 | 1.86E-04 | -1.86E-01 |
| GWP-total | kg CO ₂ ekv. | 8.75E+02 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.90E+01 | 2.49E+01 | 3.17E-01 | -4.27E+02 |
| ODP | kg CFC 11 ekv. | 1.96E-05 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 4.02E-07 | 3.91E-07 | 8.80E-09 | -5.57E-06 |
| AP | mol H ⁺ ekv. | 4.43E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 4.04E-02 | 2.76E-01 | 2.29E-03 | -2.65E+00 |
| EP-freshwater | kg P ekv. | 4.80E-01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.31E-03 | 1.45E-02 | 2.,53E-05 | -6.77E-02 |
| EP-marine | kg N ekv. | 1.08E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.02E-02 | 6.44E-02 | 8.79E-04 | -6.42E-01 |
| EP-terrestrial | mol N ekv. | 1.06E+01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.04E-01 | 7.18E-01 | 9.42E-03 | -7.20E+00 |
| POCP | kg NMVOC ekv. | 3.57E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 6.27E-02 | 2.15E-01 | 3.28E-03 | -3.12E+00 |
| ADP-minerals&metals* | kg Sb ekv. | 2.44E-03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 6.04E-05 | 1.52E-03 | 4.22E-07 | -2.33E-04 |
| ADP-fossil* | MJ | 1.66E+04 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 2.62E+02 | 3.34E+02 | 7.57E+00 | -2.62E+03 |
| ADP-fossil* | m ³ | 2.02E+02 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.10E+00 | 4.15E+00 | 3.35E-01 | -1.79E+01 |
| WDP* | <p>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</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 ¹ | kg CO ₂ ekv. | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| PM | Disease incidence | 5.25E-05 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.38E-06 | 3.81E-06 | 5.01E-08 | -4.61E-05 |
| IRP | kBq U235 ekv. | 1.12E+02 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 3.55E-01 | 2.65E+00 | 4.80E-03 | -1.08E+01 |
| ETP-fw | CTUe | 2.32E+03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.12E+02 | 1.75E+02 | 3.08E+00 | -7.09E+02 |
| HTP-c | CTUh | 3.37E-07 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 4.42E-09 | 1.52E-08 | 7.17E-11 | -1.04E-06 |
| HTP-nc | CTUh | 6.63E-06 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 6.79E-08 | 4.88E-07 | 2.30E-09 | -1.99E-05 |
| SQP | dimensionless | 2.06E+03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.58E+02 | 5.93E+02 | 1.50E+01 | -6.42E+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 | 5.39E+02 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 4,12E+00 | 5.18E+01 | 6.41E-02 | -1.18E+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 | 5.39E+02 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 4.12E+00 | 5.18E+01 | 6.41E-02 | -1.18E+02 |
| PENRE | MJ | 1.78E+04 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 2.79E+02 | 3.54E+02 | 8.05E+00 | -2.77E+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 | 1.78E+04 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 2.79E+02 | 3.54E+02 | 8.05E+00 | -2.77E+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 | 4.62E+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 | <p>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</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 | 0.00E+00 | 0.00E+00 | 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 | 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 | 0.00E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 0.00E+00 | 9.50E+02 | 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 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

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

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

Nařízení Evropského parlamentu č. 1907/2006 o registraci, hodnocení, povolování a omezování chemických látek a o zřízení Evropské agentury pro chemické látky – REACH (registrace, evaluace a autorizace chemických látek); (Regulation (EC) No 1907/2006 of the European Parliament concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and establishing a European Chemicals Agency – REACH (Registration, Evaluation and Authorisation of Chemicals)

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

Ecoinvent Centre, 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^a

internal

external

Third party verifier^b:

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.

^a Product category rules

^b 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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