



GENERAL INFORMATION

MANUFACTURER INFORMATION

Manufacturer	Maru Metall AS
Address	Järvevana tee 5, Tallinn, Estonia
Contact details	metall@maru.ee
Website	www.maru.ee

PRODUCT IDENTIFICATION

Product name	Structural steel products
Place(s) of production	Ardu, Estonia

The Building Information Foundation RTS sr

EPDs within the same product category but from different programmes may not be comparable.

EPD INFORMATION

The EPD owner has the sole ownership, liability, and responsibility for the EPD. Construction products EPDs may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

EPD program operator	The Building Information Foundation RTS sr / Building Information Ltd Malminkatu 16 A, Helsinki, Finland
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804 serves as the core PCR. In addition, the RTS PCR (English version, 26.8.2020) is used.
EPD author	Mari Kirss and Anni Oviir Rangi Maja OÜ Tondi 22-4, Tallinn Estonia www.lcasupport.com
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
Verification date	27 October 2021
EPD verifier	Ipek Goktas One Click LCA www.oneclicklca.com
EPD number	RTS_157_21
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Jukka Seppänen
RTS EPD Committee Secretary

Laura Apilo
Managing Director

PRODUCT INFORMATION

The studied product is an average of all variations.

PRODUCT DESCRIPTION

This EPD represents primed and surface coated steel structures including trusses, columns, beams, bracings, railings and secondary steel elements. The production process is similar for all products, main variation is in the raw materials. The fabricated structures comply with the requirements of the European Union and are CE marked. These steel structures are welded and painted at Maru Metall factory in Ardu, Estonia.

PRODUCT APPLICATION

Structural steel is used for a frame structure for private, public and industrial buildings, stadiums, and also for bridges and machines. The main market areas are Scandinavia and Europe.

TECHNICAL SPECIFICATIONS

Steel structures are fabricated according to product standards in compliance with project requirements. Main steel material classes used are S235 - S420 and steel density is 7850 kg/m³. Detailed technical data is delivered with every delivery on CE-mark (declaration of compliance).

PRODUCT STANDARDS

The quality management system at Maru Metall is based on the requirements of EVS-EN ISO 9001 standard. The steel structures are fabricated according to EN 1090-2 and CE-marked according to EN 1090-1 up to EXC3. Welding processes are certified according to EN ISO 3834-2.

PHYSICAL PROPERTIES OF THE PRODUCT

Dimensions of the products vary based on specific project requirements. Due to fabrication process, the recommended weight of single element fabricated is 20 t and with dimensions 4.7 x 5 x 33 m.

ADDITIONAL TECHNICAL INFORMATION

Further information can be found at www.maru.ee.

PRODUCT RAW MATERIAL COMPOSITION

Product and Packaging Material	Weight, kg	Post-consumer %	Renewable %	Country Region of origin
Steel	980.0	56	0	EU & non-EU
Coating materials	20.0	0	0	EU & non-EU
Welding wire	<0.1	0	0	EU
Packaging	9.0	0	100	EU
Total (product + packaging)	1000+9	-	-	-

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass-%	Material origin
Metals	98	EU & non-EU
Minerals	0	-
Fossil materials	2	EU & non-EU
Bio-based materials	0	-

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).



PRODUCT LIFE-CYCLE

MANUFACTURING AND PACKAGING (A1-A3)

When materials arrive to the Maru Metall factory, materials are sorted and sent to the preparation department. According to the project documentation and design requirements, material cutting, shaping and openings are carried out with machines in the factory. Prepared part details are blast cleaned and after that assembling and welding will take place. Welding works are carried out either manually or with a welding portal, depending on the type of structure. The main method of surface coating in the factory is wet painting. The galvanization process is external. When products are surface coated and finished, the products are packaged, marked and transported to the end user.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

Scenario A5 is modelled as installation of typical steel structures in a building. Fossil fuel for building machinery and hot dip galvanised fasteners made of carbon steel (bolts, nuts, washers) fasteners, and transportation packaging waste are included.

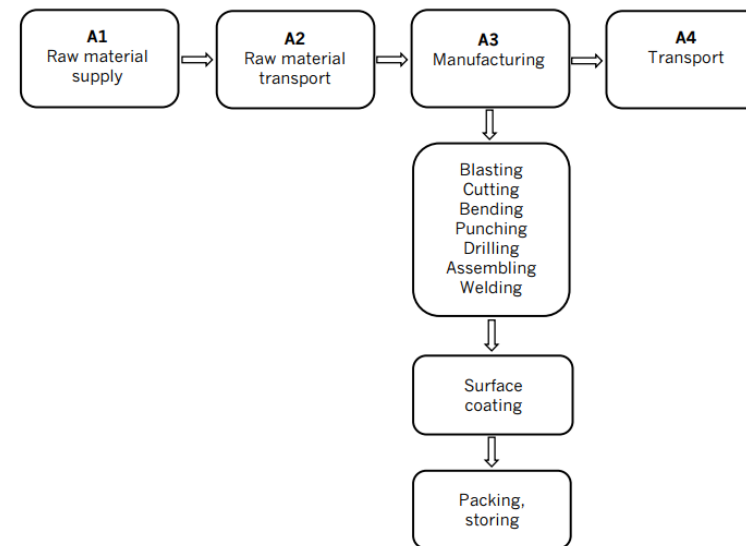
PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase. Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

At the end-of-life, in the demolition phase end-of-life product is collected (C1) and 98% of the product is assumed to be sent (C2) to recycling (C3). Around 2% is sent to landfill (C4). Due to the recycling potential of steel, some of the end-of-life product is converted into recycled raw materials (D).

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

LIFE-CYCLE ASSESSMENT INFORMATION

Period for data	2020
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DECLARED AND FUNCTIONAL UNIT

Declared unit	1 tonne
Mass per declared unit	1000 kg

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

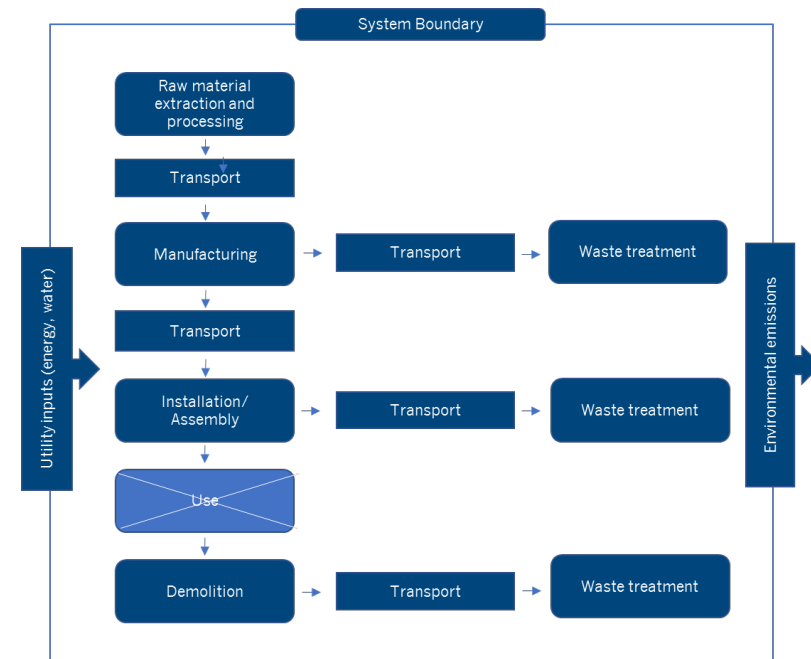
Biogenic carbon content in product, kg C	0.0
Biogenic carbon content in packaging, kg C	5.93

SYSTEM BOUNDARY

This EPD covers the cradle to gate with options scope with following modules; A1 (Raw material supply), A2 (Transport) and A3 (Manufacturing), A4 (Transport), A5 (Assembly) as well as C1 (Deconstruction), C2 (Transport at end-of-life), C3 (Waste processing) and C4 (Disposal). In addition, module D - benefits and loads beyond the system boundary is included.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D
x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x	x	x
Geography , by two-letter ISO country code or regions. The International EPD System only.																		
EU	EU	EU	EU	EU	-	-	-	-	-	-	-	EU	EU	EU	EU	EU	EU	EU
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconst./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR.



CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR. The study does not exclude any hazardous materials or substances.

The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation.

In this study, as per EN 15804, allocation is conducted in the following order:

1. Allocation should be avoided.

2. Allocation should be based on physical properties (e.g. mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

Allocation used in Ecoinvent 3.6 environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804 -standard.

This LCA study is conducted in accordance with all methodological considerations, such as performance, system boundaries, data quality, allocation procedures, and decision rules to evaluate inputs and outputs. All estimations and assumptions are given below:

• **Module A2, A4 & C2**

Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality, it may vary but as role of transportation emission in total results is small and so the variety in load assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by transportation company to serve needs of other clients.

• **Module A4**

The transportation distance is defined according to RTS PCR. The typical installation place was assumed as a weighted average of all options – 175 km by lorry and 70 km by ferry. According to the manufacturer, transportation doesn't cause losses as product are packaged properly. Also, volume capacity

utilisation factor is assumed to be 1 for the nested packaged products. Density of the product is on average 7850 kg/m³, however bulk density varies depending on product type and thickness.

• **Module A5**

A5 covers the assembly of the Products. It is assumed that the fuel consumption of assembling 1 tonne of Product is 1.5 l. The Products are fastened with hot dip galvanised fasteners made from carbon steel. Waste treatment impacts occur from the wood used in transport packaging. It is assumed that the packaging is collected and prepared for incineration (chipped). The efficiency of incineration is assumed to be over 60%.

• **Module C1**

Demolition is assumed to take 0.01 kWh/kg (Bozdağ, Ö & Seçer, M (2007)). It is assumed that 100% of the waste is collected. Fasteners are not included as cut-off is applied.

• **Module C2**

It is estimated that there is no mass loss during the use of the product, therefore the end-of-life product is assumed that it has the same weight with the declared product. All of the end-of-life product is assumed to be sent to the closest facilities such as recycling and landfill. Transportation distance to the closest disposal area is estimated as 25 km and the transportation method is assumed as lorry which is the most common.

• **Module C3**

98% of steel (World Steel Association. 2020) is recycled. Losses in the sorting process are assumed to be very small and not considered in the assessment.

• **Module C4**

The remaining 2% of steel is assumed to be sent to landfill.

• **Module D**

Benefits of recyclable waste generated in the Module C3 are considered.

ENVIRONMENTAL IMPACT DATA

Note: additional environmental impact data is presented in annexes.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO2e	1,89E3	1,25E2	2,35E2	2,25E3	2,35E1	3,99E1	3,3E0	2,18E0	2,28E1	1,06E-1	-5,80E2
GWP – fossil	kg CO2e	1,88E3	1,25E2	2,56E2	2,26E3	2,37E1	1,81E1	3,3E0	2,18E0	2,42E1	1,05E-1	-5.96E02
GWP – biogenic	kg CO2e	3,69E0	9,47E-2	-2,08E1	-1,7E1	9,79E-3	2,18E1	9,17E-4	1,65E-3	-1,39E0	2,09E-4	1.77E01
GWP – LULUC	kg CO2e	4,31E0	3,93E-2	2,26E-1	4,58E0	9,95E-3	9,1E-3	2,79E-4	6,84E-4	2,75E-2	3,13E-5	-7.33E-06
Ozone depletion pot.	kg CFC11e	1,35E-4	3,07E-5	4,85E-5	2,14E-4	5,45E-6	1,93E-6	7,12E-7	5,35E-7	3,47E-6	4,34E-8	-1.62E-05
Acidification potential	mol H+e	9,43E0	4,02E-1	2,36E0	1,22E1	3,22E-1	1,16E-1	3,45E-2	7E-3	2,93E-1	1E-3	-2.28E00
EP-freshwater ²⁾	kg Pe	1,18E-1	1,06E-3	3,46E-3	1,22E-1	1,66E-4	6,88E-4	1,33E-5	1,85E-5	1,67E-3	1,27E-6	-2.40E-02
EP-marine	kg Ne	1,82E0	8,83E-2	3,69E-1	2,28E0	7,88E-2	3,54E-2	1,52E-2	1,54E-3	6,47E-2	3,44E-4	-4.56E-01
EP-terrestrial	mol Ne	2,06E1	9,82E-1	3,89E0	2,55E1	8,76E-1	3,92E-1	1,67E-1	1,71E-2	7,5E-1	3,79E-3	-4.92E00
POCP (“smog”)	kg NMVOCe	8,64E0	3,86E-1	1,19E0	1,02E1	2,42E-1	1,32E-1	4,59E-2	6,72E-3	2,05E-1	1,1E-3	-3.14E00
ADP-minerals & metals	kg Sbe	2,89E-1	2,24E-3	4,01E-4	2,92E-1	3,3E-4	2,28E-2	5,03E-6	3,88E-5	1,34E-3	9,62E-7	-5.42E-04
ADP-fossil resources	MJ	2,35E4	2,03E3	3,59E3	2,91E4	3,56E2	2,18E2	4,54E1	3,54E1	3,35E2	2,94E0	-4.40E03
Water use ¹⁾	m3e depr.	1,24E3	7,55E0	1,56E1	1,27E3	1,13E0	6,07E0	8,46E-2	1,31E-1	4,76E0	1,36E-1	-8.74E01

1) GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation. human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3.07 to get PO4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	2.31E3	2.56E1	5.53E2	2.89E3	3.81E0	9,85E0	2.45E-1	4.45E-1	5.26E1	2.38E-2	-1.44E02
Renew. PER as material	MJ	0E0	0E0	1.98E2	1.98E2	0E0	0E0	0E0	0E0	0E0	0E0	0E0
Total use of renew. PER	MJ	2.31E3	2.56E1	7.51E2	3.09E3	3.81E0	9,85E0	2.45E-1	4.45E-1	5.26E1	2.38E-2	-1.44E02
Non-re. PER as energy	MJ	2.32E4	2.03E3	3.59E3	2.88E4	3.56E2	2,18E2	4.54E1	3.54E1	3.35E2	2.94E0	-4.40E03
Non-re. PER as material	MJ	3E2	0E0	0E0	3E2	0E0	0E0	0E0	0E0	0E0	0E0	0E0
Total use of non-re. PER	MJ	2.35E4	2.03E3	3.59E3	2.91E4	3.56E2	2,18E2	4.54E1	3.54E1	3.35E2	2.94E0	-4.40E03
Secondary materials	kg	6.19E2	0E0	0E0	6.19E2	0E0	1,15E0	0E0	0E0	0E0	0E0	2.76E02
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m3	1.6E1	4.22E-1	5.94E-1	1.71E1	6.16E-2	1,98E-1	4.01E-3	7.36E-3	1.37E-1	3.22E-3	-3.94E00

4) PER = Primary energy resources

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	Kg	6.06E2	1.97E0	4.85E0	6.12E2	3.58E-1	2,32E0	4.88E-2	3.44E-2	0E0	2.75E-3	-7.13E01
Non-hazardous waste	Kg	5.51E3	2.18E2	1.11E2	5.84E3	2.83E1	3,32E1	5.22E-1	3.8E0	0E0	2E1	-7.98E02
Radioactive waste	Kg	6.9E-2	1.39E-2	2.56E-2	1.09E-1	2.46E-3	8,53E-4	3.18E-4	2.43E-4	0E0	1.95E-5	3.19E-03

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	Kg	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0
Materials for recycling	Kg	0E0	0E0	8.69E1	8.69E1	0E0	0E0	0E0	0E0	9.8E2	0E0	0E0
Materials for energy rec	Kg	0E0	0E0	0E0	0E0	0E0	1,34E1	0E0	0E0	0E0	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0

KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO2e	1.89E0	1.25E-1	2.35E-1	2.25E0	2.37E-2	3,99E-2	3.3E-3	2.18E-3	2.28E-2	1.06E-4	-5,80E-1
ADP-minerals & metals	kg Sbe	2.89E-4	2.24E-6	4.01E-7	2.92E-4	3.3E-7	2,28E-5	5.03E-9	3.88E-8	1.34E-6	9.62E-10	-5,42E-7
ADP-fossil	MJ	2.35E1	2.03E0	3.59E0	2.91E1	3.56E-1	2,18E-1	4.54E-2	3.54E-2	3.35E-1	2.94E-3	-4,40E0
Water use	m3e depr.	1.24E0	7.55E-3	1.56E-2	1.27E0	1.13E-3	6,07E-3	8.46E-5	1.31E-4	4.76E-3	1.36E-4	-8,74E-2
Secondary materials	kg	6.19E-1	0E0	0E0	6.19E-1	0E0	1,15E-3	0E0	0E0	0E0	0E0	2,76E-1
Biog. C in product	kg C	N/A	N/A	0E0	0E0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging	kg C	N/A	N/A	5.93E-3	5.93E-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A

5) Biog. C in product = Biogenic carbon content in product

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Market for electricity, high voltage (Reference product: electricity, high voltage). Estonia. Ecoinvent 3.6. year: 2019
Electricity CO ₂ e / kWh	0.84 kg CO ₂ e / kWh
Heating data source and quality	Heat production, wood pellet, at furnace 300kw, state-of-the-art 2014 (Reference product: heat, central or small-scale, other than natural gas). Rest of World. Ecoinvent 3.6. year: 2019
District heating CO ₂ e / kWh	0.004 kg CO ₂ e / kWh
Fuel data source and quality	Diesel, burned in building machine (Reference product: diesel, burned in building machine). Ecoinvent 3.6. Global. year: 2019
Fuel CO ₂ e / kWh	0.33 kg CO ₂ e / kWh

Transport scenario documentation (A4)

Scenario parameter	Value
Destination	Weighted average
Specific transport CO ₂ e emissions. lorry	0.09 kg CO ₂ e / tkm
Average transport distance. lorry	175 km
Specific transport CO ₂ e emissions. ferry	0.011 CO ₂ e / km
Average transport distance. ferry	70 km
Capacity utilization (including empty return)	100%
Bulk density of transported products	7850 kg/m ³
Volume capacity utilization factor	1

End of life scenario documentation

Scenario parameter	Value
Collection process – kg collected separately	1000
Collection process – kg collected with mixed waste	0
Recovery process – kg for re-use	0
Recovery process – kg for recycling	980
Recovery process – kg for energy recovery	0
Disposal (total) – kg for final deposition	20
Scenario assumptions e.g. transportation	End-of-life product is transported 25 km with an average lorry.

BIBLIOGRAPHY

ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations. Principles and procedures.

ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.

ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.

ISO 21930:2017 Sustainability in buildings and civil engineering works. Core rules for environmental product declarations of construction products and services.

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EN 15804:2012+A2:2019 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products.

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Bozdağ, Ö & Seçer, M. 2007. *Energy consumption of RC buildings during their life cycle.*

World Steel Association. 2020. *Steel industry key facts - Steel is at the core of a green economy.* [website]



ABOUT THE MANUFACTURER

Maru Metall AS is a leading steel structures manufacturer in Estonia with over 20 years of experience. The production capacity is up to 8000T per year and 80% of the production is exported to several countries, mainly to the Scandinavia.

The company has experience with different structures and volumes, from sport facilities, industrial buildings, residential buildings to mechanical structures. Maru Metall AS is committed to responsible production of high-quality steel structures with execution class up to EXC3, providing with full service from design works to delivery.

The entire production cycle is carried out in the production plant in Ardu, Estonia which enables to control the production in all its stages. The company quality management system is certified according to requirements of the ISO 9001, production processes according to EN 1090, and welding processes according to EN ISO 3834-2 requirements.

For more information: www.maru.ee



EPD AUTHOR AND CONTRIBUTORS

Manufacturer	Maru Metall AS
EPD author	Mari Kirss and Anni Oviir
EPD verifier	Ipek Goktas
EPD program operator	The Building Information Foundation RTS sr
Background data	This EPD is based on Ecoinvent 3.6 (cut-off) and One Click LCA databases
LCA software	The LCA and EPD have been created using One Click LCA Pre-Verified EPD Generator for metal-based products



VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with EN 15804, ISO 14025, and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The background report (project report) for this EPD

Why does verification transparency matter? [Read more online.](#)

VERIFICATION OVERVIEW

Following independent third party has verified this specific EPD:

EPD verification information	Answer
Independent EPD verifier	Ipek Goktas
EPD verification started on	19 October 2021
EPD verification completed on	27 October 2021
Approver of the EPD verifier	The Building Information Foundation RTS sr
Author & tool verification	Answer
EPD author	Mari Kirss, Anni Oviir
EPD Generator module	EPD Generator for metal-based products
Software verification date	17 January 2021

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of

- the data collected and used in the LCA calculations,
- the way the LCA-based calculations have been carried out,
- the presentation of environmental data in the EPD, and
- other additional environmental information, as present

with respect to the procedural and methodological requirements in ISO 14025:2010 and EN 15804:2012+A2:2019.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Ipek Goktas, One Click LCA, www.oneclicklca.com

ANNEX 1 : ENVIRONMENTAL IMPACTS – EN 15804+A1. CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Global Warming Pot.	kg CO2e	1.82E3	1.24E2	2.53E2	2.19E3	2.35E1	1,76E1	3.27E0	2.16E0	2.38E1	1.03E-1	-5.64E2
Ozone depletion Pot.	kg CFC11e	1.27E-4	2.44E-5	3.99E-5	1.92E-4	4.33E-6	1,64E-6	5.63E-7	4.25E-7	2.95E-6	3.44E-8	-1.39E-5
Acidification	kg SO2e	7.47E0	2.66E-1	1.96E0	9.69E0	2.5E-1	6,26E-2	4.87E-3	4.63E-3	1.82E-1	4.17E-4	-1.81E0
Eutrophication	kg PO4 3e	4.66E0	5.37E-2	2.05E-1	4.92E0	3.11E-2	2,81E-2	8.57E-4	9.34E-4	7.44E-2	8.06E-5	-9.97E0
POCP ("smog")	kg C2H4e	9.52E-1	1.53E-2	7.68E-2	1.04E0	7.47E-3	8,11E-3	5.01E-4	2.66E-4	8.54E-3	3.06E-5	-4.63E-1
ADP-elements	kg Sbe	2.89E-1	2.24E-3	4.01E-4	2.92E-1	3.3E-4	2,28E-2	5.03E-6	3.88E-5	1.34E-3	9.62E-7	-5.42E-3
ADP-fossil	MJ	2.35E4	2.03E3	3.59E3	2.91E4	3.56E2	2,18E2	4.54E1	3.54E1	3.35E2	2.94E0	-4.40E3