ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Tikkurila

Temazinc 77
Temazinc 99
Temazinc EE

Fontezinc 85
Fontezinc HR

Temasil 90

EPD HUB, HUB-0956
Publishing date 15 December 2023, last updated date 15 December 2023, valid until 15 December 2028

Created with OneClick LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	PPG Tikkurila
Address	Heidehofintie 2, 01300 Vantaa, Finland
Contact details	Sustainability.COE@ppg.com
Website	https://tikkurilagroup.com/

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR version 1.0, 1 Feb 2022
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Kristjan Saul
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
EPD verifier	Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCTS

Representative product name	**Fontezinc 85**
Other products covered by EPD	Fontezinc HR, Temasil 90, Temazinc 77, Temazinc 99, Temazinc EE
Place of production	Vantaa facility, Finland
Period for data	Calendar year 2022
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	43 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 litre
Declared unit mass	2,901 kg
GWP-fossil, A1-A3 (kgCO2e)	15,0
GWP-total, A1-A3 (kgCO2e)	15,1
Secondary material, inputs (%)	0.227
Secondary material, outputs (%)	0.0
Total energy use, A1-A3 (kWh)	14,9
Total water use, A1-A3 (m3e)	0,0465

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Tikkurila offers a broad range of decorative paints for consumers and professionals for surface protection and decoration. The product offerings include, among others, interior paints, lacquers and effect products, exterior products for wood, mineral, and metal surfaces, as well as services related to painting. In addition, Tikkurila produces paints and coatings for the metal and wood industries.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	61%	EU
Minerals	4%	EU
Fossil materials	20%	EU
Bio-based materials	0%	-
Water	15%	EU

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.0201

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 litre
Mass per declared unit	2,901 kg
Functional unit	-
Reference service life	-

SUBSTANCES, REACH - VERY HIGH CONCERN

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

PRODUCT DESCRIPTIONS

Fontezinc 85 is a two-component water-borne zinc-rich epoxy paint.
It is designed for use as a primer in water-borne epoxy, polyurethane and acrylic systems for steel surfaces exposed to severe climatic conditions up to corrosivity class C5.
The product is recommended as a more environmentally friendly option for bridges, cranes and steel frameworks, as well as steelwork and equipment in the forest and chemical industries; such as tubular bridges, conveyors etc.

Fontezinc HR is a two-component single coat water-borne zinc-rich silicate paint.
It has exceptional corrosion protection properties, and outstanding resistance to both wet and dry abrasion. Chemical bonding prevents the spreading of rust between the paint and the steel even in the most severe corrosivity classes. As Fontezinc HR is self-healing it protects the coating film and the steel from corrosion.
The product is recommended for hydropower, docks, offshore rigs, lighters etc. It can also be used for cisterns and pipelines (underground and above ground) in the petroleum/chemical industry. Also suitable for infrastructure where extremely good anti-corrosion properties are required, such as bridges, railings, poles and load-bearing structures.

Temasil 90 is a two-component zinc-rich ethyl silicate paint.
It can be used as a single coat or as a primer in protective coating systems. Temasil 90 offers cathodic protection for steel and forms a protective coating with an effect similar to that achieved with galvanizing.
It is used in environments where extended durability is required, and it can also be used on steel surfaces exposed to oil and organic solvents.
The product is recommended for bridges, pipework, heat exchangers and chemical tanks etc.

Temazinc 77 is a two-component polyamide cured zinc-rich epoxy paint that contains over 80% zinc and provides good cathodic protection for steel.
It is used as a primer in epoxy, polyurethane, acrylic and chlorinated rubber systems for steel surfaces exposed to severe climatic conditions where extended durability is required. It can be used without a topcoat on surfaces exposed to weathering.
The product is recommended for bridges, cranes and steel frameworks as well as steelwork and equipment in the forest and chemical industries, such as tubular bridges, conveyors etc.

Temazinc 99 is a two-component polyamide cured zinc-rich epoxy paint with zinc content that exceeds the requirements of the ISO 12944-5 standard for zinc-rich primers. The product provides superior cathodic protection for steel.
It is used as a primer in epoxy, polyurethane, acrylic and chlorinated rubber systems for steel surfaces exposed to severe climatic conditions where extended durability is required. It can be used without a topcoat on surfaces exposed to weathering.
The product is recommended for bridges, cranes and steel frameworks as well as steelwork and equipment in the forest and chemical industries, such as tubular bridges, conveyors etc.

Temazinc EE is a one-component zinc dust paint. It is the ideal product for touch-up painting on damaged areas of zinc-primed steel. The paint provides cathodic protection for steel and can be used without a topcoat on surfaces exposed to weathering.
The product is recommended to be used as a primer on steel surfaces exposed to climatic and chemical stress.

Further information can be found at:
https://tikkurila.com/

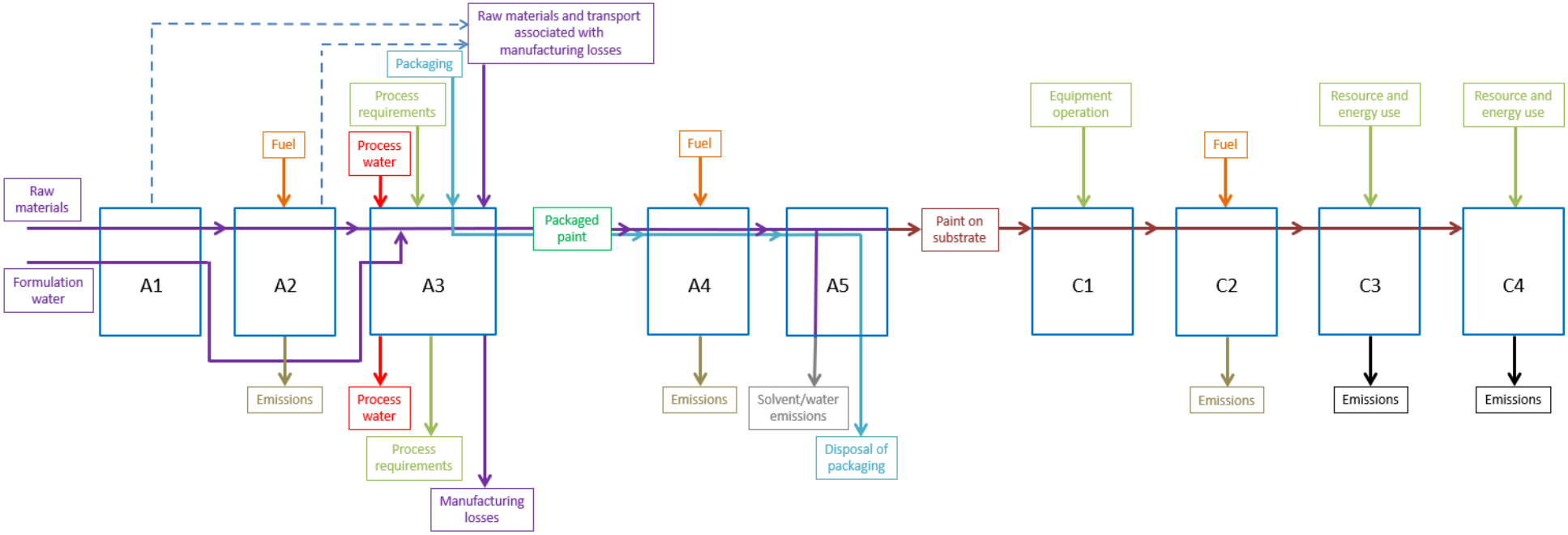
PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table. *Modules not declared = MND. Modules not relevant = MNR.*

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
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction Demolition	Transport	Waste processing	Disposal	Reuse Recovery Recycling
✓	✓	✓	✓	✓	MND	MND	MND	MND	MND	MND	MND	✓	✓	✓	✓	✓

LIFE-CYCLE STAGES DIAGRAM



MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The paint production process at the manufacturing facility consists of several separate steps. In the initial step solvents, powders, and additives are mixed together and then dispersed to a homogeneous paste. The following step is the let-down stage: binders, solvents, additives, etc. are mixed with the paste to obtain a ready-to-use paint. At the next stage, compliance of the product with specified quality parameters is checked. In the packaging stage, paint is filled into cans of various sizes on filling machines, loaded onto pallets by robots, and transferred to the warehouse. Eventually, the paint is transported to retailers and construction sites.

TRANSPORT AND INSTALLATION (A4-A5)

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

The transportation distance is defined according to EPD Hub PCR. Average distance of transportation from production plant to building site is assumed to be 179 km and the transportation method is assumed to be lorry. Transportation does not cause losses as products are packaged properly.

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)

Paint is usually not removed from substrates at end-of life, so the consumption of energy, natural resources, and the impacts of demolition are assumed to be negligible. All of the end-of-life product is assumed to be sent to the closest waste treatment facilities.
For metal substrates, it is assumed that 100% of the dried paint burns up in the metal recycling process.
The packaging materials (wooden pallets, metal cans, cardboard, and packaging film) are sent to recycling and have benefits beyond the system boundary.

LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard 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.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging materials	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Represented by the product with the worst-case A1-A3 GWP-fossil impact
Variation in GWP-fossil for A1-A3	43 %

This EPD is made for a representative product which has the worst-case A1-A3 GWP-fossil impact. The variation in GWP-fossil impact for A1-A3 modules among the products is -43% for the lowest impact product. The individual A1-A3 GWP-fossil impacts of the products and their difference from the representative product are listed in the Annex.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. Ecoinvent v3.8 and One Click LCA databases were used as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	1,39E+01	4,34E-01	7,79E-01	1,51E+01	7,15E-02	8,32E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,55E+00	-1,24E-01
GWP – fossil	kg CO_2e	1,38E+01	4,34E-01	7,85E-01	1,50E+01	7,15E-02	3,77E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,64E+00	-1,27E-01
GWP – biogenic	kg CO_2e	9,47E-02	5,14E-06	-6,35E-03	8,83E-02	0,00E+00	4,54E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	-9,03E-02	2,79E-03
GWP – LULUC	kg CO_2e	2,09E-03	1,95E-04	3,83E-04	2,66E-03	3,00E-05	3,74E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	5,78E-04	-1,84E-05
Ozone depletion pot.	kg CFC_{-11}e	1,01E-06	9,78E-08	1,36E-07	1,24E-06	1,69E-08	3,69E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	2,19E-07	-4,94E-09
Acidification potential	mol H^+e	1,81E-01	4,46E-03	3,09E-03	1,89E-01	2,13E-04	1,51E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	3,85E-03	-5,19E-04
EP-freshwater[2)]	kg Pe	4,78E-02	2,70E-06	9,02E-05	4,79E-02	5,42E-07	1,06E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,33E-05	-5,22E-06
EP-marine	kg Ne	2,57E-02	1,17E-03	5,94E-04	2,75E-02	4,38E-05	5,12E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	8,08E-04	-1,06E-04
EP-terrestrial	mol Ne	2,69E-01	1,30E-02	6,51E-03	2,88E-01	4,87E-04	3,94E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	9,13E-03	-1,24E-03
POCP ("smog")[3)]	kg NMVOCe	7,13E-02	3,58E-03	4,97E-03	7,99E-02	1,89E-04	2,48E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	2,60E-03	-6,32E-04
ADP-minerals & metals[4)]	kg Sbe	3,77E-05	1,28E-06	4,69E-06	4,37E-05	2,55E-07	7,47E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	6,80E-06	-2,37E-06
ADP-fossil resources	MJ	4,33E+01	6,25E+00	5,89E+00	5,55E+01	1,09E+00	3,56E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,22E+01	-1,21E+00
Water use[5)]	m^3e depr.	1,59E+00	2,67E-02	5,14E-01	2,13E+00	5,33E-03	6,92E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	2,47E-01	-2,43E-02

1) GWP = Global Warming Potential
2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e
3) POCP = Photochemical ozone formation
4) ADP = Abiotic depletion potential
5) 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 experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	8,95E-08	3,30E-08	2,83E-08	1,51E-07	6,50E-09	3,00E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	3,83E-08	-8,32E-09
Ionizing radiation[6)]	kBq U235e	2,14E-01	3,19E-02	2,06E-01	4,52E-01	5,76E-03	3,79E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	6,76E-02	3,95E-03
Ecotoxicity (freshwater)	CTUe	6,13E+02	4,94E+00	1,71E+01	6,35E+02	9,25E-01	3,11E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	3,07E+01	-4,40E+00
Human toxicity, cancer	CTUh	9,59E-07	1,81E-10	2,84E-09	9,62E-07	2,80E-11	5,67E-12	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	6,91E-10	1,04E-09
Human tox. non-cancer	CTUh	1,01E-04	4,73E-09	1,43E-08	1,01E-04	9,10E-10	9,29E-11	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	6,08E-08	-2,98E-09
SQP[7)]	-	5,91E+00	3,94E+00	5,07E+00	1,49E+01	9,48E-01	1,01E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	5,81E+00	-9,66E-01

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator
7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	2,15E+00	7,96E-02	1,29E+00	3,52E+00	1,63E-02	3,20E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	3,33E-01	-2,13E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,00E-01	1,00E-01	0,00E+00	-1,00E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-8,10E-02
Total use of renew. PER	MJ	2,15E+00	7,96E-02	1,39E+00	3,62E+00	1,63E-02	-9,73E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	3,33E-01	-2,94E-01
Non-re. PER as energy	MJ	3,39E+01	6,25E+00	1,01E+01	5,02E+01	1,09E+00	3,56E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,22E+01	-1,13E+00
Non-re. PER as material	MJ	9,46E+00	0,00E+00	2,77E-03	9,47E+00	0,00E+00	-5,20E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	-4,26E+00	2,55E-04
Total use of non-re. PER	MJ	4,33E+01	6,25E+00	1,01E+01	5,97E+01	1,09E+00	-5,17E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	7,91E+00	-1,13E+00
Secondary materials	kg	6,58E-03	2,17E-03	5,17E-02	6,04E-02	3,75E-04	4,37E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	2,35E-02	7,39E-02
Renew. secondary fuels	MJ	2,18E-04	1,95E-05	2,46E-03	2,69E-03	3,93E-06	2,49E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	4,85E-05	-1,15E-05
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	4,60E-05	4,60E-05	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	3,78E-02	7,12E-04	8,00E-03	4,65E-02	1,48E-04	1,78E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	6,47E-03	-3,09E-04

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1,47E-01	7,18E-03	1,98E-01	3,52E-01	1,28E-03	2,69E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,37E+00	-4,10E-02
Non-hazardous waste	kg	3,23E+00	1,13E-01	9,22E-01	4,26E+00	2,28E-02	7,79E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,13E+00	-2,04E-01
Radioactive waste	kg	7,66E-05	4,33E-05	7,58E-05	1,96E-04	7,49E-06	2,21E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	6,11E-06	1,74E-07

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,60E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	9,14E-01	9,14E-01	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	1,37E+01	4,30E-01	7,74E-01	1,49E+01	7,08E-02	5,10E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,63E+00	-1,20E-01
Ozone depletion Pot.	kg CFC_{-11}e	9,94E-07	7,75E-08	1,56E-07	1,23E-06	1,34E-08	2,97E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,85E-07	-5,47E-09
Acidification	kg SO_2e	1,55E-01	3,54E-03	2,54E-03	1,61E-01	1,74E-04	1,20E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	3,10E-03	-4,20E-04
Eutrophication	kg PO_4^3e	5,78E-02	5,17E-04	1,25E-03	5,96E-02	3,81E-05	1,55E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	9,86E-04	-2,13E-04
POCP (“smog”)	kg C_2H_4e	1,01E-02	1,07E-04	1,83E-03	1,21E-02	8,57E-06	1,01E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,29E-04	-7,18E-05
ADP-elements	kg Sbe	1,68E-02	1,26E-06	4,66E-06	1,68E-02	2,49E-07	7,42E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	5,05E-06	-2,36E-06
ADP-fossil	MJ	1,61E+02	6,25E+00	1,19E+01	1,79E+02	1,09E+00	3,56E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,22E+01	-1,21E+00

ENVIRONMENTAL IMPACTS – TRACI 2.1. / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	2,06E+00	4,30E-01	7,50E-01	3,24E+00	7,08E-02	4,84E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,63E+00	-1,21E-01
Ozone Depletion	kg CFC_{-11}e	4,23E-07	7,75E-08	1,48E-07	6,48E-07	1,34E-08	2,97E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,85E-07	-5,46E-09
Acidification	kg SO_2e	4,62E-01	2,07E-01	8,95E-02	7,58E-01	9,57E-03	7,01E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,73E-01	-2,35E-02
Eutrophication	kg Ne	2,93E-03	2,53E-04	2,31E-04	3,41E-03	2,55E-05	2,60E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	3,01E-04	-1,85E-05
POCP (“smog”)	kg O_3e	5,61E-03	3,01E-03	2,05E-02	2,91E-02	1,14E-04	8,77E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	2,07E-03	-3,04E-04
ADP-fossil	MJ	4,87E+00	8,69E-01	6,33E-01	6,38E+00	1,50E-01	3,64E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	1,53E+00	-7,03E-02

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 reference standard, 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 digital background data for this EPD

Why does verification transparency matter? Read more online
This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

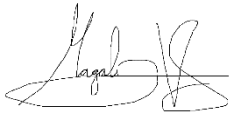
I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried 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 reference standard.

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.

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited
15.12.2023



VERIFIED ISO 14025

ANNEX

Product	A1-A3 GWP-fossil kg CO_2e / liter	Difference from representative product
Fontezinc 85	**14,7**	-
Fontezinc HR	13,4	-11%
Temasil 90	9,09	-39%
Temazinc 77	8,61	-43%
Temazinc 99	14,3	-5%
Temazinc EE	13,7	-8%