ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Ground Rods
ELIT AS

EPD HUB, HUB-4609
Published on 05.12.2025, last updated on 05.12.2025, valid until 04.12.2030

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	ELIT AS
Address	Ulvedalsvegen 2, 2030 Nannestad, Norway
Contact details	firmapost@elit.no
Website	https://elit.no/

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 50693:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025
Sector	Electrical product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4 and D
EPD author	Martine Haggren
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Yazan Badour, as authorized verifier acting for EPD HUB Limited

This EPD is intended for business-to-business and/or business-to-consumer communication. 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.

PRODUCT

Product name	Ground Rods
Additional labels	-
Product reference	(30100048, 30100045, 30100043, 30100006, 30100005). *This EPD applies to all variants and sizes of grounding rods produced according to the same technical specification, including products not listed above.*
Place(s) of raw material origin	China
Place of production	Qingdao, China
Place(s) of installation and use	Norway
Period for data	01.01.2024-31.12.2024
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	-
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	60,6

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
Mass of packaging	0,0258 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	10,9
GWP-total, A1-A3 ($kgCO_2e$)	10,9
Secondary material, inputs (%)	3,88
Secondary material, outputs (%)	77
Total energy use, A1-A3 (kWh)	43
Net freshwater use, A1-A3 (m^3)	0,08

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

ELIT is a Norwegian competence center and total supplier offering sourcing and technical service solutions to the electrical, HVAC, plumbing, industrial, and infrastructure sectors. In addition to delivering high-quality components and systems, ELIT provides product customization, technical support, and professional training through its internal competence center.

ELIT offers a wide range of products tailored to meet the needs of different industries. For more information about ELIT AS and its full product selection, visit https://elit.no/.

PRODUCT DESCRIPTION

The product group consists of copper-clad steel ground rods used for electrical earthing applications. Each rod features a solid steel core with a uniform copper coating that ensures high corrosion resistance and long-term conductivity. The coating is applied through an electrochemical process that provides strong adhesion and prevents cracking during installation. The rods are available in different lengths (typically 1.5–3.0 m) and diameters (approximately 14–17 mm), but all variants share the same material composition and manufacturing process. This EPD covers all variants and sizes of copper-clad steel ground rods produced according to the same technical specifications and manufacturing process, including products not specifically listed above.

Product application:
Copper-clad steel ground rods are used for grounding and lightning protection systems in electrical installations. They provide a stable, low-resistance connection to the earth, ensuring safety and system reliability in residential, commercial, and industrial applications.

Technical characteristics:
-Core: Structural steel
-Coating: Copper layer (≥ 250 µm)
-Dimensions: Ø14–17 mm, lengths 1.5–3.0 m
-Corrosion resistance: High, coating adheres firmly to core
-Electrical performance: Stable and reliable conductivity
-Typical product mass: ~1.9–4.0 kg depending on size

Further information can be found on:
https://elit.no/

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	China
Minerals	-	-
Fossil materials	-	-
Bio-based materials	-	-

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	0,0109

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg
Mass per declared unit	1 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 LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

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		
x	x	x	x	x	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x		
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

Modules not declared = ND. Modules not relevant = MNR

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.

A market-based approach is used in modelling the electricity mix utilized in the factory.
The ground rods are sourced as finished products from a supplier in China. They consist of a steel core with a copper coating and are manufactured using standard electroplating and metal forming processes. Key production steps include shaping, coating, cutting, and finishing. The declared data represents typical conditions for steel and copper processing. This EPD covers all ground rod sizes offered by the supplier, which vary in length and total mass but share identical materials and manufacturing processes.

The finished products are transported to ELIT's central warehouse in Nannestad, Norway, where they are stored, packed, and distributed to customers. ELIT does not perform any additional manufacturing or modification. Packaging materials, such as plastic film and wooden pallets, are included in the inventory. Electricity consumption related to storage and packaging is calculated based on ELIT's annual energy use, allocated by the total product volume handled. The electricity mix reflects Norwegian grid data, including transmission losses.

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.

Module A4 covers the transport of the products to the customer. Transport for A4 is calculated based on the average annual sales distance from ELIT's main warehouse to customers. This transport distance is calculated to be 217km, and the transportation method is lorry. The total transported weight includes both products and packaging per declared unit. Vehicle capacity utilization (volume factor) is assumed to be 100%, meaning full load. In practice, this may vary; however, since transport emissions contribute relatively little to the overall environmental impacts, variation in load factor

is considered negligible. To ensure a conservative approach, empty returns are included in the assessment through the average load factor in the Ecoinvent transport datasets. Products are properly packaged to avoid damage or losses during transport.

Ground rods do not result in significant material losses, emissions, or energy use during installation. Only packaging waste treatment is reported in A5, based on EU end-of-life scenarios for wood, and plastic packaging materials.

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)

Demolition is assumed to consume 0.01 kWh/kg of product, with diesel fuel from construction machinery as the energy source (C1). It is assumed that 100% of the waste is collected and transported to a waste treatment facility, with a transport distance of 50 km by lorry (C2). At the end of life, copper is assumed to be 60% recycled and 40% landfilled (EN 50693:2019), while steel and ferrous metals is assumed to be 80% recycled and 10% landfilled (EN 50693:2019). Benefits and loads in Module D are calculated for the recycling activities described in Module C3, and for the exported energy from the incineration of packaging materials in Module A5.

SYSTEM DIAGRAM

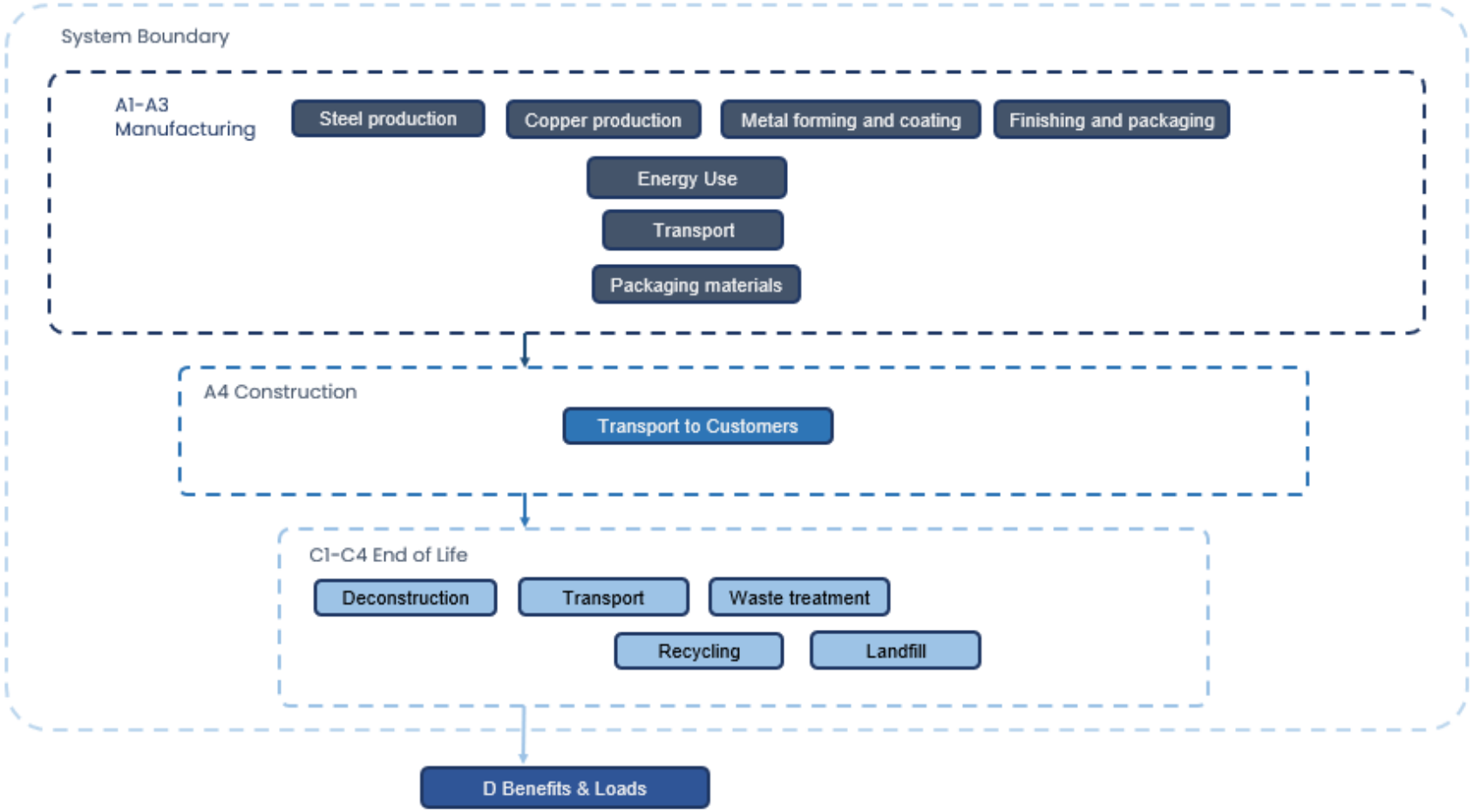

Figure: Life Cycle Diagram- *Overview of the life cycle stages included in the EPD, showing all relevant processes from raw material extraction to end-of-life, including potential benefits beyond the system boundary.*

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 that is 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.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

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 made according to 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 material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

The ground rods are purchased as fully finished products. ELIT does not perform any additional manufacturing or processing steps beyond packaging and distribution. No modifications or alterations are made to the products before they are sold.

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	-

This EPD represents copper-clad steel ground rods produced at a single production site in China. The declared unit is 1 kg of finished product, allowing

the results to be applied to all ground rod variants supplied by ELIT, as they share identical materials and manufacturing processes.

The only variation between product variants is length and total mass. The environmental impacts can therefore be linearly scaled according to product mass (see Annex for scaling table).

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 v3.2.3. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

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	4,29E+00	6,59E+00	-1,97E-02	1,09E+01	2,40E-02	3,78E-02	ND	ND	ND	ND	ND	ND	ND	3,61E-03	3,99E-02	2,09E-02	1,44E-03	-1,13E+00
GWP – fossil	kg CO_2e	4,28E+00	6,59E+00	1,59E-02	1,09E+01	2,40E-02	1,87E-03	ND	ND	ND	ND	ND	ND	ND	3,60E-03	3,98E-02	2,09E-02	1,44E-03	-1,13E+00
GWP – biogenic	kg CO_2e	1,40E-04	5,30E-04	-3,57E-02	-3,50E-02	5,43E-06	3,59E-02	ND	ND	ND	ND	ND	ND	ND	3,68E-07	8,70E-06	-6,25E-05	-4,57E-07	0,00E+00
GWP – LULUC	kg CO_2e	1,00E-02	4,37E-04	8,30E-05	1,06E-02	1,07E-05	1,33E-06	ND	ND	ND	ND	ND	ND	ND	3,69E-07	1,76E-05	2,46E-05	8,21E-07	-7,45E-04
Ozone depletion pot.	kg $CFC\text{-}_{11}e$	1,38E-07	1,01E-07	4,14E-10	2,40E-07	3,54E-10	1,45E-11	ND	ND	ND	ND	ND	ND	ND	5,52E-11	5,57E-10	2,25E-10	4,16E-11	-5,71E-09
Acidification potential	mol H^+e	4,01E-02	2,85E-02	7,80E-05	6,87E-02	8,17E-05	4,97E-06	ND	ND	ND	ND	ND	ND	ND	3,25E-05	1,33E-04	2,24E-04	1,02E-05	-1,69E-02
EP-freshwater[2)]	kg Pe	2,86E-01	8,46E-05	5,49E-06	2,86E-01	1,87E-06	2,34E-07	ND	ND	ND	ND	ND	ND	ND	1,04E-07	3,10E-06	1,13E-05	1,18E-07	-1,08E-02
EP-marine	kg Ne	9,82E-03	1,17E-02	1,84E-05	2,15E-02	2,68E-05	5,23E-06	ND	ND	ND	ND	ND	ND	ND	1,51E-05	4,30E-05	4,97E-05	3,88E-06	-4,60E-03
EP-terrestrial	mol Ne	1,34E-01	1,27E-01	1,98E-04	2,61E-01	2,92E-04	2,03E-05	ND	ND	ND	ND	ND	ND	ND	1,65E-04	4,68E-04	5,61E-04	4,24E-05	-6,87E-02
POCP ("smog")[3)]	kg NMVOCe	3,33E-02	4,03E-02	7,52E-05	7,37E-02	1,20E-04	6,62E-06	ND	ND	ND	ND	ND	ND	ND	4,93E-05	1,85E-04	1,65E-04	1,52E-05	-1,39E-02
ADP-minerals & metals[4)]	kg Sbe	3,55E-04	1,23E-06	3,13E-07	3,56E-04	6,68E-08	2,54E-09	ND	ND	ND	ND	ND	ND	ND	1,29E-09	1,31E-07	1,23E-06	2,28E-09	-2,05E-04
ADP-fossil resources	MJ	5,47E+01	8,72E+01	2,23E-01	1,42E+02	3,48E-01	1,26E-02	ND	ND	ND	ND	ND	ND	ND	4,72E-02	5,59E-01	2,47E-01	3,52E-02	-1,09E+01
Water use[5)]	m^3e depr.	2,45E+00	1,14E-01	6,58E-01	3,22E+00	1,72E-03	3,56E-04	ND	ND	ND	ND	ND	ND	ND	1,18E-04	2,59E-03	3,91E-03	1,02E-04	-1,08E-01

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, EF 3.1

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	4,40E-07	6,09E-08	1,40E-09	5,02E-07	2,40E-09	8,69E-11	ND	ND	ND	ND	ND	ND	ND	9,25E-10	3,16E-09	3,12E-09	2,32E-10	-1,63E-07
Ionizing radiation[6)]	kBq U235e	1,33E-01	2,23E-02	5,28E-03	1,60E-01	3,03E-04	3,32E-05	ND	ND	ND	ND	ND	ND	ND	2,09E-05	4,52E-04	8,87E-04	2,21E-05	-3,00E-02
Ecotoxicity (freshwater)	CTUe	2,89E+02	9,46E+00	1,39E-01	2,99E+02	4,92E-02	4,47E-03	ND	ND	ND	ND	ND	ND	ND	2,60E-03	8,84E-02	1,43E-01	2,96E-03	-1,23E+02
Human toxicity, cancer	CTUh	1,35E-08	3,99E-10	4,61E-11	1,39E-08	3,95E-12	4,69E-13	ND	ND	ND	ND	ND	ND	ND	3,71E-13	6,77E-12	1,68E-11	2,65E-13	3,21E-11
Human tox. non-cancer	CTUh	1,55E-07	6,68E-08	3,50E-10	2,22E-07	2,25E-10	2,48E-11	ND	ND	ND	ND	ND	ND	ND	5,87E-12	3,50E-10	1,07E-09	6,08E-12	3,28E-08
SQP[7)]	-	2,54E+01	5,41E+00	2,92E+00	3,37E+01	3,50E-01	1,18E-02	ND	ND	ND	ND	ND	ND	ND	3,30E-03	3,34E-01	4,68E-01	6,94E-02	-1,38E+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	7,46E+00	2,88E-01	2,37E+00	1,01E+01	4,77E-03	-3,67E-01	ND	ND	ND	ND	ND	ND	ND	2,99E-04	7,66E-03	3,84E-02	3,40E-04	-3,51E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	3,14E-01	3,14E-01	0,00E+00	-3,14E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	7,46E+00	2,88E-01	2,68E+00	1,04E+01	4,77E-03	-6,82E-01	ND	ND	ND	ND	ND	ND	ND	2,99E-04	7,66E-03	3,84E-02	3,40E-04	-3,51E+00
Non-re. PER as energy	MJ	5,72E+01	8,72E+01	2,03E-01	1,45E+02	3,48E-01	-1,98E-02	ND	ND	ND	ND	ND	ND	ND	4,72E-02	5,59E-01	2,47E-01	3,52E-02	-1,09E+01
Non-re. PER as material	MJ	0,00E+00	0,00E+00	2,08E-02	2,08E-02	0,00E+00	-2,08E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	5,72E+01	8,72E+01	2,23E-01	1,45E+02	3,48E-01	-4,06E-02	ND	ND	ND	ND	ND	ND	ND	4,72E-02	5,59E-01	2,47E-01	3,52E-02	-1,09E+01
Secondary materials	kg	3,88E-02	7,59E-03	1,38E-03	4,78E-02	1,48E-04	9,34E-06	ND	ND	ND	ND	ND	ND	ND	1,96E-05	2,51E-04	2,86E-04	8,86E-06	4,82E-01
Renew. secondary fuels	MJ	5,48E-04	3,46E-05	1,06E-02	1,12E-02	1,88E-06	9,19E-08	ND	ND	ND	ND	ND	ND	ND	5,12E-08	3,20E-06	1,30E-05	1,83E-07	-3,97E-04
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Use of net fresh water	m^3	6,14E-02	3,83E-03	1,54E-02	8,05E-02	5,14E-05	-3,21E-05	ND	ND	ND	ND	ND	ND	ND	3,12E-06	7,40E-05	1,08E-04	3,66E-05	-2,89E-02

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	3,55E-01	3,31E-02	1,38E-03	3,90E-01	5,89E-04	8,79E-05	ND	ND	ND	ND	ND	ND	ND	5,25E-05	9,74E-04	1,93E-03	3,89E-05	-4,80E-01
Non-hazardous waste	kg	3,40E+00	5,80E-01	3,56E-02	4,01E+00	1,09E-02	5,69E-02	ND	ND	ND	ND	ND	ND	ND	7,15E-04	1,83E-02	5,42E-02	8,90E-04	9,46E+00
Radioactive waste	kg	9,56E-05	5,41E-06	1,18E-06	1,02E-04	7,41E-08	8,29E-09	ND	ND	ND	ND	ND	ND	ND	5,12E-09	1,11E-07	2,18E-07	5,40E-09	-7,52E-06

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	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	5,70E-05	0,00E+00	0,00E+00	5,70E-05	0,00E+00	8,32E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	7,70E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	4,20E-13	0,00E+00	0,00E+00	4,20E-13	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,48E-02	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,90E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy –	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,58E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

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	4,27E+00	6,55E+00	1,66E-02	1,08E+01	2,38E-02	2,41E-03	ND	ND	ND	ND	ND	ND	ND	3,59E-03	3,96E-02	2,09E-02	1,42E-03	-1,12E+00
Ozone depletion Pot.	kg $CFC_{-11}e$	1,80E-07	8,00E-08	3,09E-10	2,60E-07	2,82E-10	1,17E-11	ND	ND	ND	ND	ND	ND	ND	4,37E-11	4,45E-10	1,86E-10	3,30E-11	-5,12E-09
Acidification	kg SO_2e	3,20E-02	2,08E-02	6,23E-05	5,28E-02	6,24E-05	3,69E-06	ND	ND	ND	ND	ND	ND	ND	2,29E-05	1,02E-04	1,80E-04	7,54E-06	-1,17E-02
Eutrophication	kg PO_4^3e	9,36E-03	4,21E-03	2,75E-04	1,38E-02	1,52E-05	1,32E-06	ND	ND	ND	ND	ND	ND	ND	5,34E-06	2,47E-05	2,56E-05	2,39E-06	-3,21E-03
POCP (“smog”)	kg C_2H_4e	2,74E-03	1,51E-03	7,06E-06	4,26E-03	5,56E-06	4,18E-07	ND	ND	ND	ND	ND	ND	ND	1,71E-06	9,11E-06	1,07E-05	7,12E-07	-8,80E-04
ADP-elements	kg Sbe	3,54E-04	1,18E-06	3,09E-07	3,55E-04	6,52E-08	2,44E-09	ND	ND	ND	ND	ND	ND	ND	1,26E-09	1,28E-07	1,23E-06	2,24E-09	-2,05E-04
ADP-fossil	MJ	5,30E+01	8,69E+01	1,49E-01	1,40E+02	3,43E-01	1,20E-02	ND	ND	ND	ND	ND	ND	ND	4,68E-02	5,52E-01	2,33E-01	3,49E-02	-1,04E+01

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	4,29E+00	6,59E+00	1,60E-02	1,09E+01	2,40E-02	1,87E-03	ND	ND	ND	ND	ND	ND	ND	3,61E-03	3,99E-02	2,09E-02	1,44E-03	-1,13E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH4 fossil, CH4 biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO2 is set to zero.

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

1. Market for electricity, medium voltage, Norway, Ecoinvent, 0.0181 kgCO2e/kWh

Transport scenario documentation - A4 (Transport resources)

1. Market for transport, freight, lorry >32 metric ton, EURO5, 217 km

Installation scenario documentation - A5 (Installation waste)

1. Treatment of waste wood, post-consumer, sorting and shredding, Ecoinvent, Materials for recycling, 0.008 kg
2. Treatment of waste wood, untreated, municipal incineration, Ecoinvent, 0.0075 kg
3. Exported Energy: Electricity, Ecoinvent, 0.017 MJ
4. Exported Energy: Electricity, Ecoinvent, 0.002 MJ
5. Exported Energy: Thermal, Ecoinvent, 0.023 MJ
6. Exported Energy: Thermal, Ecoinvent, 0.0028 MJ
7. Treatment of waste wood, untreated, sanitary landfill, Ecoinvent, 0.0095 kg
8. Treatment of waste polyethylene, for recycling, unsorted, sorting, Ecoinvent, Materials for recycling, 3.2E-4 kg
9. Treatment of waste polyethylene, municipal incineration, Ecoinvent, 3.0E-4 kg
10. Treatment of waste polyethylene, sanitary landfill, Ecoinvent, 1.8E-4 kg

End of life scenario documentation - C1-C4 (Data source)

1. Market for diesel, burned in building machine, Ecoinvent, 0.01 kWh
2. Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 0.09 kg
3. Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 0.68 kg
4. Treatment of scrap steel, inert material landfill, Ecoinvent, 0.06 kg
5. Treatment of scrap steel, inert material landfill, Ecoinvent, 0.17 kg

Scenario information	Value
Scenario assumptions e.g. transportation	

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance is filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub cannot identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez
Tool verification validity: 27 March 2025 - 26 March 2028

Yazan Badour, as authorized verifier acting for EPD HUB Limited

05.12.2025

ANNEX I: SCALING TABLE

Table 1. EN 15804+A2 GWP scaling table

This table presents the Global Warming Potential (GWP) values for different ELIT ground rod variants, based on their mass (in kg). The GWP values are calculated in accordance with EN 15804+A2 and the relevant PCR for electrical and electronic products. Each variant shares identical materials and manufacturing processes; therefore, the environmental impact results can be linearly scaled according to product mass.

Product Name	Product Number	Mass (in kg)	A1-A3, EN 15804+A2		
			GWP_{-total}	$GWP_{-fossil}$	$GWP_{-biogenic}$
Ground rod	Declared unit	1	10,85	10,88	0,04
ELIT JSK15M142K T254	30100005	1,92	20,83	20,89	0,07
ELIT JSK21M142K T254	30100006	2,6	28,21	28,29	0,10
ELIT JSK30M142K T254	30100043	3,85	41,77	41,89	0,15
ELIT JSK21M172K T250	30100048	4	43,4	43,52	0,16
ELIT JSK30M172K T250	30100045	5,72	62,06	62,23	0,23