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Hot-dip galvanized steel fasteners



Owner of the EPD:

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ITB is the verified member of The European Platform for EPD program operators and LCA practitioner www.eco-platform.org

Basic information

This declaration is the Type III Environmental Product Declaration (EPD) based on EN 15804+A2 and verified according to ISO 14025 by an external auditor. It contains the information on the impacts of the declared construction materials on the environment and their aspects verified by the independent body according to ISO 14025. Basically, comparison or evaluation of EPD data is possible only if all the compared data were created according to EN 15804+A2.

Life cycle analysis (LCA): A1-A3, A4-A5, C1-C4 and D modules in accordance with EN 15804+A2
(Cradle-to-Grave with options)

The year of preparing the EPD: 2026

Product standard: EN ISO 1461; EN ISO 10684.

Service Life: 5-50 years depending on the corrosivity category of the environment in which the finished product is used

PCR: ITB-PCR A (PCR based on EN 15804+A2)

Declared unit: 1 kg of manufactured product

Reasons for performing LCA: B2B

Representativeness: Polish, Global, 2024

MANUFACTURER

ASMET Sp. z o.o., headquartered in Reguły near Warsaw, is a Polish manufacturing and trading company specialising in fasteners and technical products. The company's products are used across a wide range of industries, including construction, mechanical engineering, energy, petrochemicals and the automotive sector.

ASMET's portfolio includes standard and customised fasteners, including products manufactured at its own facility in accordance with customer requirements and specifications. An important part of the company's

activities is the technical support provided by its qualified engineering staff, including assistance in selecting appropriate solutions at different stages of cooperation with customers. The company's offering is complemented by modern logistics solutions that support inventory management and continuity of supply, including just-in-time delivery systems and RFID technology.

The company's origins date back to 1986, when it began operating as ASMET Artykuły Metalowe Andrzej Sajnaga. In the following years, its production, warehousing and logistics facilities were progressively expanded, while solutions aimed at increasing process automation and improving the quality of customer service were implemented. Since 29 October 2021, the company has operated under the name ASMET Sp. z o.o.

ASMET's product range includes both products manufactured at its facility in Reguły and products sourced from manufacturers and suppliers located in Poland, other European Union countries and non-EU countries. The company's business model combines manufacturing, quality control, warehousing, order picking and the distribution of fasteners.

The ASMET Group also includes manufacturing companies, such as Fabryka Śrub Bispol Sp. z o.o. in Bielsko-Biała, Poland, and Unibolt A/S in Vejle, Denmark. ASMET also operates modern inspection and measurement facilities supporting quality control and the supervision of manufacturing processes and supplies. The Group remains a family-owned business developed and managed by the Sajnaga family.



Fig. 1. Headquarters and production plant of ASMET Sp. z o. o. in Reguły, Poland.

PRODUCTS DESCRIPTION AND APPLICATION

The products covered by this Environmental Product Declaration are hot-dip galvanised steel fasteners intended for structural and mechanical connections as well as general-purpose applications.

The declared product group includes standard and special fasteners, such as nuts, threaded rods, dowels, pins, couplings, connectors and other steel fastening components. The products are manufactured or supplied in accordance with the relevant technical requirements and product specifications.

The fasteners are made primarily of carbon or low-alloy steel. Depending on the product type and required mechanical properties, the manufacturing process may include cutting, cold or hot forming, machining, thread rolling or cutting, heat treatment and finishing operations. Corrosion protection is provided by a zinc coating applied through hot-dip galvanising.

The products are used in a variety of sectors, including construction, mechanical engineering, energy, petrochemicals and the automotive industry. Typical applications include connections between steel components, assembly systems, load-bearing structures, machinery and equipment, industrial installations and other assemblies requiring durable, corrosion-resistant fasteners.

The selection of the appropriate fastener type, dimensions, property class, coating parameters and installation method depends on the design requirements, anticipated mechanical loads, exposure conditions and the corrosivity category of the environment. The products should be selected and installed in accordance with the applicable standards, technical documentation and the manufacturer's recommendations.

Depending on the corrosivity category, exposure conditions, zinc coating thickness and conditions of use, the expected period of corrosion protection may range from approximately 5 to 50 years. This range is provided for information purposes only and does not constitute a guaranteed service life for any specific application.

The declared environmental results represent average values for the product group, calculated on the basis of production and supply volumes during the selected reference period. The scope of the declaration covers fasteners manufactured by ASMET Sp. z o.o. and Fabryka Śrub Bispol Sp. z o.o., as well as finished hot-dip galvanised fasteners sourced from external suppliers.

Additional technical information and product documentation are available on the ASMET Sp. z o.o. website: <https://asmet.com.pl/>

LIFE CYCLE ASSESSMENT (LCA) – General rules applied

Declared unit

Declared unit is 1 kg of manufactured product.

System boundary

The life cycle analysis of the declared products covers "Product Stage" A1-A3, A4-A5, C1-C4+D modules in accordance with EN 15804 and ITB PCR A (cradle to grave with options). Energy and water consumption, emissions as well as information on generated wastes were inventoried and were included in the calculation. It can be assumed that the total sum of omitted processes does not exceed 2% of all impact categories. In accordance with EN 15804+A2, machines and facilities (capital goods) required for the production as well as transportation of employees were not included in LCA.

Allocation

The allocation principles applied in this EPD are based on EN 15804+A2 and the applicable ITB General PCR A. The declared product represents an average hot-dip galvanized steel fastener calculated from the annual production and supply volumes recorded during the reference year.

The product system comprises three supply and production routes:

- finished hot-dip galvanized fasteners sourced from external suppliers
- fasteners manufactured by ASMET at the Reguły production facility;
- fasteners manufactured by Fabryka Śrub Bispol Sp. z o.o. in Bielsko-Biała.

Allocation was performed primarily on a physical basis, using product mass as the allocation criterion. Material, energy, transport and waste flows that could be directly assigned to the declared products were allocated directly. Common flows that could not be assigned to a specific product group were allocated according to the annual mass of the products covered by the EPD.

The production of the declared fasteners includes, depending on the product type and production route, steel processing, forming, cutting, machining, thread rolling or cutting, heat treatment, finishing, inspection and packaging. Hot-dip galvanizing of the products manufactured by ASMET and Bispol is carried out by external service providers and includes the associated transport to and from the galvanizing facilities.

The finished imported fasteners are represented by a complete A1–A3 proxy dataset covering the manufacture of steel, fastener production and hot-dip galvanizing. Consequently, separate steel production, manufacturing energy and galvanizing processes were not added for the imported product share, in order to avoid double counting. The imported finished fasteners account for 54.7%

of the declared average product by mass. As primary manufacturing data from these suppliers were not available (total plant production figures could not be obtained), the imported share is modelled with a substitute approach built from genericecoinvent processes: steel input, metal working, hot-dip galvanizing and production electricity. For the products manufactured by ASMET and Bispol, raw materials and purchased components are included in module A1. Transport of raw materials, ancillary materials and packaging to the relevant production facility is included in module A2. Electricity, process heat, natural gas, district heat, liquefied petroleum gas, water consumption, external hot-dip galvanizing, packaging and production waste are included in module A3, as applicable to each production route.

Steel production waste generated by ASMET and Bispol was allocated to the declared products on the basis of the material balance. The allocated quantity was limited to the difference between the steel input and the steel remaining in the finished products. This approach prevents the allocation of waste originating from other products, infrastructure works or activities outside the declared product system.

Packaging materials were included in the calculations. Reusable wooden pallets were allocated according to the assumed number of use cycles, while paper, cardboard and other non-reusable packaging materials were allocated according to their annual consumption and the mass of the declared products.

No economic allocation was applied. Potential benefits and loads associated with the recycling of steel after the end of life are reported separately in module D and are not credited to modules A1–A3.

System limits

All identified material and energy inputs associated with the manufacture and supply of the declared hot-dip galvanized steel fasteners were inventoried and included in the assessment, subject to the data availability and modelling assumptions described in this EPD. Modules A1–A3 include steel and other purchased components, zinc contained in the finished products, ancillary and packaging materials, transport to the production facilities, electricity, photovoltaic electricity, natural gas, LPG, process and district heat, water, external hot-dip galvanizing and the treatment of production waste.

Imported finished fasteners are represented by a complete A1–A3 proxy dataset covering steel production, fastener manufacturing and hot-dip galvanizing. These processes were not added separately to the imported product share in order to avoid double counting.

The assessment also includes transport to the customer in A4, installation in A5, end-of-life processes in C1–C4 and potential benefits from steel recycling in module D.

Production machinery, buildings, infrastructure, employee transport and administrative activities not directly related to manufacturing are excluded. The significance of omitted flows is assessed in accordance with EN 15804+A2 and the applicable ITB General PCR A.

Modules A1 and A2: Raw material supply and transport

The declared hot-dip galvanized steel fasteners are manufactured primarily from carbon or low-alloy steel, with zinc used as the corrosion-protective coating. The product system also includes purchased fastener components, ancillary materials and packaging materials. For products manufactured by ASMET and Bispol, module A1 includes the production of steel, zinc and other purchased materials and components. Finished imported fasteners are represented by a complete proxy dataset covering steel production, fastener manufacturing and hot-dip galvanizing. Module A2 covers the transport of steel, components, ancillary materials and packaging to the ASMET and Bispol production facilities. The transport of imported finished products to ASMET is modelled using the applicable sea and road transport routes. Supplier-specific distances were applied where

available; otherwise, representative transport assumptions and appropriate background datasets were used.

Module A3: Production

Production begins with the receipt and preparation of steel and purchased components. Depending on the type of fastener, the manufacturing process includes cutting, cold or hot forming, machining, thread rolling or cutting, heat treatment and finishing operations.

Products manufactured by ASMET and Bispol are subsequently transported to external galvanizing facilities, where the protective zinc coating is applied by hot-dip galvanizing. The galvanized products are returned to the relevant facility for inspection, sorting and packaging.

Visual and dimensional inspections are performed in accordance with the applicable product specifications and quality-control procedures. Finished products are packed in cardboard packaging, on reusable wooden pallets or in other transport packaging and prepared for shipment.

Module A3 includes electricity, photovoltaic electricity, natural gas, LPG, process and district heat, water consumption, external hot-dip galvanizing, packaging materials and the treatment of production waste. Imported finished fasteners are represented by a complete A1–A3 proxy dataset and are therefore not assigned additional manufacturing processes in the ASMET model. A diagram of the production process is shown in Fig. 2.

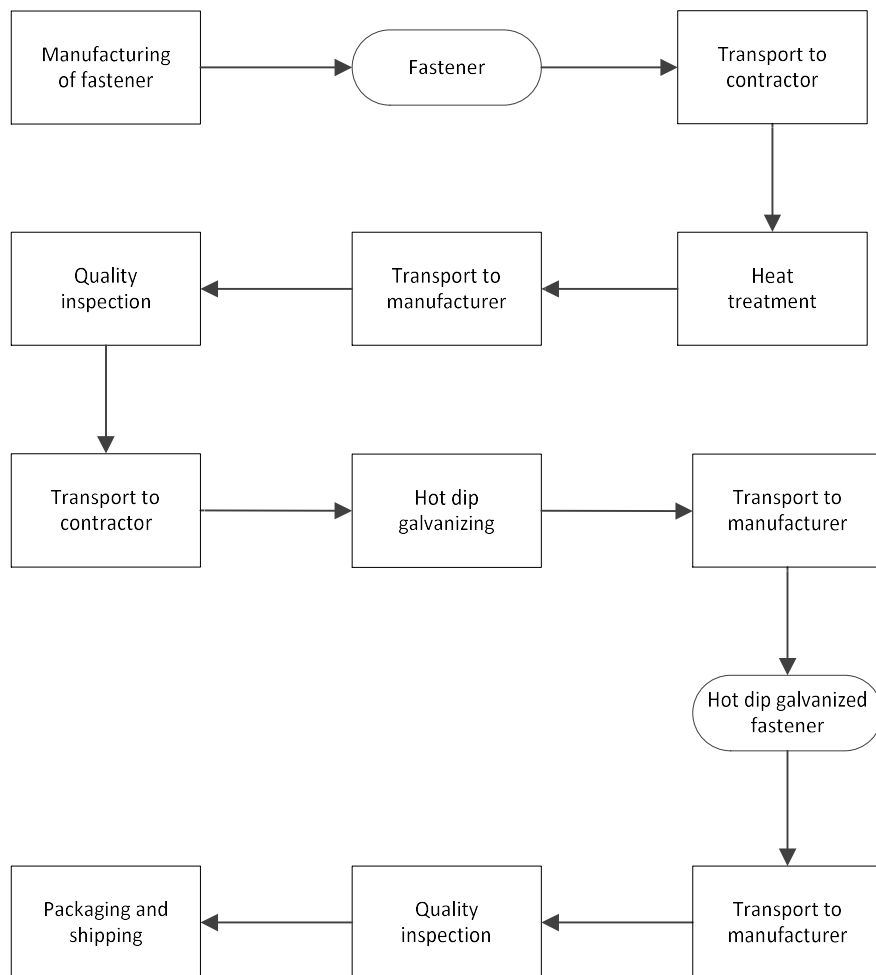


Fig. 2 Manufacturing process scheme (A3)

Module A4: Transport to the construction site

In the adopted scenario, the declared hot-dip galvanized steel fasteners are transported from the ASMET distribution facility to the customer, construction site or assembly facility over an assumed average distance of 300 km. Transport is modelled using the ecoinvent dataset *market for transport, freight, lorry 16–32 metric ton, EURO 5 – RER*. Fuel consumption, average vehicle utilisation and empty return trips are included within the system boundary of the transport dataset.

Module A5: Installation

The declared hot-dip galvanized steel fasteners are installed as part of mechanical connections in accordance with the applicable design documentation, product specifications and manufacturer's instructions. No additional material losses, water consumption or installation-related energy use are assigned to the declared product in the adopted scenario. Consequently, no installation-stage material or energy inputs are assigned to the declared product. Module A5 accounts only for the treatment of packaging waste (sorting/recycling of cardboard and plastics and the related transport); its calculated environmental impact is therefore small but non-zero, as reported in the results tables. Packaging materials themselves are included in modules A1–A3.

Modules C1–C4 and D: End-of-life

In the adopted scenario, the declared hot-dip galvanized steel fasteners are removed together with the structure during renovation, replacement or demolition works. Module C1 includes an assumed electricity consumption of 0.01 kWh per kg of product for mechanical dismantling and separation. The recovered products are not assumed to be reused as fasteners because their loading history and mechanical properties after use cannot be reliably verified. After dismantling, the steel components are transported over an assumed distance of 100 km to a waste-processing facility. Transport is modelled using the ecoinvent dataset *market for transport, freight, lorry 16–32 metric ton, EURO 5 – RER*. It is assumed that 100% of the product is collected at the end-of-life stage. In module C3, 95% of the product mass is sorted and prepared for material recycling. The remaining 5% is sent to landfill and included in module C4. Potential benefits and loads associated with the recycling of recovered steel scrap are reported separately in module D. The calculation considers the net amount of recyclable steel leaving the product system after accounting for the recycled material already present in the steel input. Module D is based on a proxy approach and is reported separately from modules A–C.

Table 1. End-of-life scenario for steel products units

Material	Material recovery	Recycling	Landfilling
Steel products	100%	95%	5%

Data quality

The data selected for LCA originate from ITB LCI questionnaires completed by ASMET Sp z o.o. which were verified during data audit. No data collected is older than five years and no generic datasets used are older than ten years. The representativeness, completeness, reliability, and consistency of the primary data for the products manufactured by ASMET and Bispol is judged as good. For the imported product share (54.7% of the declared average product), which is modelled using a substitute proxy approach in the absence of supplier-specific primary data, the geographical and technological representativeness is judged as low; this limitation is reflected in the data quality assessment and in the sensitivity analysis. Specific (LCI) data quality analysis was a part of the input data verification.

Data collection period

The data for manufacture of the declared products refer to period between 01.01.2024 – 31.12.2024 (1 year). The life cycle assessments were prepared for Poland and Europe as reference area.

Assumptions and estimates

The impacts of silicates were aggregated using weighted average.

Sensitivity analysis

A sensitivity analysis was performed for the main source of uncertainty in the model, namely the imported product share (54.7% of the declared average product), which is modelled with a substitute proxy approach. The imported share therefore governs the overall uncertainty of the declared results, consistent with its low geographical and technological representativeness.

Calculation rules

LCA was done in accordance with ITB PCR A document (v1.6), based on EN 15804+A2.

Databases

The Life Cycle Assessment was based on primary data collected from ASMET Sp. z o.o. and background data obtained from the Ecoinvent v.3.11 database, supplemented, where appropriate, with specific Environmental Product Declarations (EPDs) and the ITB database. A specific data quality analysis was carried out as part of the external verification.

Additional information

Environmental impacts for electricity are the result of the energy mix of Polish for electricity (2024 year). Polish electricity (Ecoinvent v3.11 supplemented by actual national KOBiZE data) emission factor applied to the global warming potential of grid electricity is 0.553 kg CO₂/kWh, i.e. the national KOBiZE factor for final consumers based on 2024 data (published December 2025). This factor is applied to the GWP indicator only; all other impact and resource indicators for electricity are taken from ecoinvent 3.11. As a general rule, no particular environmental or health protection measures other than those specified by law are necessary. No mass balance approach was used. Product composition is free from biogenic carbon.

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LIFE CYCLE ASSESSMENT (LCA) – Results

Declared unit

The declaration refers to declared unit (DU) – 1 kg of manufactured product.

Table 3. System boundaries for the environmental characteristic of the product.

Environmental assessment information (MD – Module Declared, MND – Module Not Declared, INA – Indicator Not Assessed)																
Product stage			Construction process		Use stage							End of life				Benefits and loads beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport to construction site	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse-recovery-recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
MD	MD	MD	MD	MD	MND	MND	MND	MND	MND	MND	MND	MD	MD	MD	MD	MD

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Table 4. Life cycle assessment (LCA) results for specific product – environmental impacts (DU: 1 kg)

Indicator	Unit	A1	A2	A3	A1–A3	A4	A5	C1	C2	C3	C4	D
Global warming potential – total	kg CO ₂ eq.	4.06E+00	2.42E-01	1.38E+00	5.69E+00	5.71E-02	1.88E-03	9.90E-03	1.90E-02	7.09E-02	3.13E-04	-1.44E+00
Global warming potential – fossil	kg CO ₂ eq.	3.30E+00	2.42E-01	1.38E+00	4.92E+00	5.71E-02	1.60E-03	9.89E-03	1.90E-02	7.08E-02	3.13E-04	-1.44E+00
Global warming potential – biogenic	kg CO ₂ eq.	1.80E-03	7.72E-05	1.59E-03	3.47E-03	3.65E-05	2.71E-04	8.57E-06	1.22E-05	3.81E-05	1.40E-07	2.65E-03
Global warming potential – land use and land use change	kg CO ₂ eq.	2.18E-03	9.99E-05	1.53E-04	2.44E-03	1.89E-05	6.19E-07	6.03E-07	6.31E-06	3.14E-05	1.79E-07	-5.89E-04
Stratospheric ozone depletion potential	kg CFC-11 eq.	6.97E-08	4.54E-09	8.96E-09	8.32E-08	1.24E-09	3.00E-11	3.79E-11	4.15E-10	1.09E-09	8.71E-12	4.00E-12
Acidification potential, accumulated exceedance	mol H ⁺ eq.	1.85E-02	3.27E-03	1.36E-02	3.54E-02	1.83E-04	5.18E-06	6.90E-05	6.11E-05	5.94E-04	2.19E-06	-3.22E-03
Eutrophication potential – freshwater	kg P eq.	2.42E-03	1.34E-05	1.95E-03	4.38E-03	3.90E-06	1.73E-07	1.07E-05	1.30E-06	3.28E-06	2.74E-08	-1.37E-07
Eutrophication potential – marine	kg N eq.	3.45E-03	8.55E-04	1.80E-03	6.11E-03	6.17E-05	1.79E-06	9.01E-06	2.06E-05	2.71E-04	8.41E-07	-7.73E-04
Eutrophication potential – terrestrial	mol N eq.	3.44E-02	9.46E-03	1.58E-02	5.97E-02	6.71E-04	1.78E-05	7.64E-05	2.24E-04	2.96E-03	9.19E-06	-8.37E-03
Formation potential of tropospheric ozone	kg NMVOC eq.	1.28E-02	2.82E-03	4.63E-03	2.02E-02	2.78E-04	7.08E-06	2.22E-05	9.26E-05	8.98E-04	3.32E-06	-2.57E-03
Abiotic depletion potential – minerals and metals	kg Sb eq.	6.21E-05	6.04E-07	7.56E-07	6.35E-05	1.97E-07	7.33E-09	2.39E-09	6.56E-08	5.42E-08	4.66E-10	-1.61E-08
Abiotic depletion potential – fossil resources	MJ	3.82E+01	3.25E+00	2.05E+01	6.19E+01	8.09E-01	2.05E-02	1.04E-01	2.70E-01	9.60E-01	7.66E-03	-1.08E+01
Water deprivation potential	m ³ world eq. deprived	1.22E+00	1.43E-02	4.15E-01	1.65E+00	4.24E-03	1.64E-04	2.35E-03	1.41E-03	5.43E-03	3.37E-04	-2.21E-02

Table 5. Life cycle assessment (LCA) results for specific product – additional impacts indicators (DU: 1 kg)

Indicator	Unit	A1-A5	C1-C4	D
Particulate matter	Disease incidence	INA	INA	INA
Potential human exposure efficiency relative to U235	eg. kBq U235	INA	INA	INA
Potential comparative toxic unit for ecosystems	CTUe	INA	INA	INA
Potential comparative toxic unit for humans (cancer effects)	CTUh	INA	INA	INA
Potential comparative toxic unit for humans (non-cancer effects)	CTUh	INA	INA	INA
Potential soil quality index	dimensionless	INA	INA	INA

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Table 6. Life cycle assessment (LCA) results for specific product - the resource use (DU: 1 kg)

Indicator	Unit	A1	A2	A3	A1–A3	A4	A5	C1	C2	C3	C4	D
Consumption of renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	3.42E+00	4.28E-02	1.36E+00	4.83E+00	1.32E-02	-1.88E-01	8.49E-03	4.39E-03	8.34E-03	7.16E-05	1.64E+00
Consumption of renewable primary energy resources used as raw materials	MJ	4.23E-01	0.00E+00	-4.96E-02	3.73E-01	0.00E+00	1.88E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total consumption of renewable primary energy resources	MJ	4.05E+00	4.28E-02	1.69E+00	5.79E+00	1.32E-02	5.93E-04	8.49E-03	4.39E-03	8.34E-03	7.16E-05	1.64E+00
Consumption of non-renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	3.70E+01	3.25E+00	1.84E+01	5.87E+01	8.09E-01	2.05E-02	1.04E-01	2.70E-01	9.60E-01	7.66E-03	-1.10E+01
Consumption of non-renewable primary energy resources used as raw materials	MJ	8.43E-01	0.00E+00	1.44E+00	2.29E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total consumption of non-renewable primary energy resources	MJ	3.84E+01	3.25E+00	2.08E+01	6.25E+01	8.09E-01	2.05E-02	1.04E-01	2.70E-01	9.60E-01	7.66E-03	-1.10E+01
Consumption of secondary materials	kg	4.64E-01	1.49E-03	2.54E-01	7.19E-01	3.62E-04	1.46E-05	7.29E-06	1.21E-04	4.02E-04	1.91E-06	7.05E-01
Consumption of renew. secondary fuels	MJ	3.40E-03	1.34E-05	8.28E-05	3.49E-03	4.74E-06	1.37E-07	3.26E-08	1.58E-06	1.81E-06	3.98E-08	0.00E+00
Consumption of non-renewable secondary fuels	MJ	6.66E-07	0.00E+00	1.21E-06	1.88E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net consumption of freshwater	m³	2.30E-02	3.29E-04	1.01E-02	3.34E-02	9.78E-05	3.32E-06	5.51E-05	3.26E-05	1.32E-04	7.92E-06	-9.91E-04

Table 7. Life cycle assessment (LCA) results for specific product – waste categories (DU: 1 kg)

Indicator	Unit	A1	A2	A3	A1–A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.14E+00	4.54E-03	2.10E-01	1.35E+00	1.16E-03	5.56E-05	1.04E-03	3.86E-04	1.25E-03	8.72E-06	-4.65E-11
Non-hazardous waste disposed	kg	1.36E+01	2.63E+00	9.39E+00	2.56E+01	2.49E-02	1.44E-03	5.21E-02	8.29E-03	2.49E-02	2.02E-04	-2.12E-02
Radioactive waste disposed	kg	4.02E-03	6.99E-07	7.23E-03	1.12E-02	2.38E-07	1.23E-08	1.03E-08	7.94E-08	9.60E-08	4.80E-09	1.57E-04
Components for re-use	kg	2.18E-02	0.00E+00	3.97E-02	6.15E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	5.18E-03	1.10E-03	5.29E-03	1.16E-02	9.68E-06	1.17E-02	4.48E-06	3.23E-06	1.13E-03	8.30E-08	0.00E+00
Materials for energy recovery	kg	1.06E-05	1.54E-07	1.70E-07	1.10E-05	5.14E-08	1.47E-09	7.74E-10	1.71E-08	2.06E-08	7.61E-07	0.00E+00
Exported energy (EEE+EET)	MJ	6.71E-02	1.00E-03	2.12E-02	8.93E-02	3.54E-04	1.32E-05	3.23E-05	1.18E-04	0.00E+00	7.61E-07	0.00E+00

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Verification

The process of verification of this EPD is in accordance with ISO 14025. After verification, this EPD is valid for a 5-year-period. EPD does not have to be recalculated after 5 years, if the underlying data have not changed significantly.

The basis for LCA analysis was EN 15804+A2 and ITB PCR A	
Independent verification corresponding to ISO 14025 (subclause 8.1.3.)	
☒ external	☐ internal
External verification of EPD: PhD. Eng. Halina Prejzner LCA, LCI audit and input data verification: Filip Poznański, M.Sc. Eng. LCA verification: Michał Piasecki, PhD., D.Sc., Eng.	

Note 1: The declaration owner has the sole ownership, liability, and responsibility for the information provided and contained in EPD. Declarations of construction products may not be comparable if they do not comply with EN 15804+A2. For further information about comparability, see EN 15804+A2 and ISO 14025.

Note 2: ITB is a public Research Organization and Notified Body (EC Reg. no 1488) to the European Commission and to other Member States of the European Union designated for the tasks concerning the assessment of building products' performance. ITB acts as the independent, third-party verification organization (ISO 17025/17065/17029). ITB-EPD program is recognized and registered member of The European Platform - Association of EPD program operators and ITB-EPD declarations are registered and stored in the international ECO-PORTAL.

Normative references

- ITB PCR A General Product Category Rules for Construction Products
- EN ISO 1461:2022 - Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods
- EN ISO 10684:2004 - Fasteners - Hot dip galvanized coatings
- ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures
- ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services
- ISO 14044:2006 Environmental management – Life cycle assessment – Requirements and guidelines
- ISO 15686-1:2011 Buildings and constructed assets – Service life planning – Part 1: General principles and framework
- ISO 15686-8:2008 Buildings and constructed assets – Service life planning – Part 8: Reference service life and service-life estimation
- EN 15804:2012+A2:2019 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products
- ISO 14067:2018 Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification
- PN-EN 15942:2012 Sustainability of construction works – Environmental product declarations – Communication format business-to-business
- KOBIZE CO₂, SO₂, NO_x, CO, and total dust emission indicators for electricity. December 2024
- <https://ecoinvent.org/>

LCA, LCI audit and input data verification
Michał Piasecki, PhD. D.Sc. C.E. Eng.
/Qualified electronic signature/

Head of Thermal Physic, Acoustic and Environment Department
Agnieszka Winkler-Skalna, PhD. C.E. Eng.
/Qualified electronic signature/



Instytut Techniki Budowlanej

00-611 Warsaw, Filtrów 1

Thermal Physics, Acoustics and Environment Department

02-656 Warsaw, Ksawerów 21

CERTIFICATE № 1013/2026 of TYPE III ENVIRONMENTAL DECLARATION

Product:

Hot-dip galvanized steel fasteners

Manufacturer:

"ASMET" Sp. Z.O. O.

Reguły, al. Jerozolimskie 280; 05-820 Piastów, Poland

confirms the correctness of the data included in the development of
Type III Environmental Declaration and accordance with the requirements of the standard

EN 15804+A2

**Sustainability of construction works.
Environmental product declarations.
Core rules for the product category of construction products.**

This certificate, issued for the first time on
26th September 2026
is valid for 5 years or until amendment of mentioned Environmental Declaration

Head of the Thermal Physic, Acoustics
and Environment Department

Agnieszka Winkler-Skalna, PhD



Deputy Director
for Research and Innovation

Krzysztof Kuczyński, PhD

Warsaw, September 2026