Type III Environmental Product Declaration No. 637/2024

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Steel ventilation ducts and fittings

Owner of the EPD:

Alnor Systemy Wentylacji Sp. z o.o.
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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-A5, C1-C4 and D modules in accordance with EN 15804+A2
(Cradle-to-Gate with options)

Product standards: EN 1505:2001, PN-EN 1506:2007, PN-EN-1507:2007, PN-EN 12237:2005

The year of preparing the EPD: 2024

Service Life: 50 years for standard product

PCR: ITB-PCR A

Declared unit: 1 kg

Reasons for performing LCA: B2B

Representativeness: Poland, European, 2021

MANUFACTURER

Figure 1 Bird's-eye view of Alnor Systemy Wentylacji Sp. z o.o.

Alnor Systemy Wentylacji Sp. z o. o. is a Polish company operating since 1994 (since 2004 based in Wola Mrokowska near Warsaw), which is a leading manufacturer and distributor of ventilation systems in the country. Despite its position on the market that has been consolidated for almost thirty years, the company does not rest on its laurels. The brand's international offer (Alnor Systemy Wentylacji products are currently exported to 85 countries) includes complete ventilation solutions made of galvanized and stainless steel. The company has a very wide range of various types of ventilation devices. The brand is constantly developing, and the Alnor team of specialists is constantly looking for innovative solutions - it was the first company in Poland to develop a heat recovery installation system with zoning, currently the most efficient and economical method of zoning with an air stream.

The willingness to create better and better solutions and improve the quality of the products offered is evidenced, among other things, by the activities of the brand's laboratory. The research and tests carried out there are carried out in accordance with the requirements of the standards, guaranteeing customers reliable and repeatable results. The quality of Alnor Ventilation Systems products is confirmed, among others, by National Technical Assessments, TÜV, RISE certificates, M1 class cleanliness certificate and acoustic tests of silencers.

Alnor Ventilation Systems also focuses on excellent relationships with customers and transparent principles of cooperation - modern machinery allows the execution of even the most unusual orders, during the entire process, customers receive from the company access to programs supporting the design and calculation of ventilation installations, and orders can be easily placed via the platform B2B.

PRODUCTS DESCRIPTION AND APPLICATION

The steel rectangular ducts and fittings covered by this EPD are sized in accordance with EN 1505:2001, “Ventilation for buildings. Sheet metal air ducts and fittings with rectangular cross-section. Dimensions” and reference standards. The surface area of ventilation ducts and fittings is measured according to DIN 18379, “German construction contract procedures – Part C: General technical specifications for building works – Room ventilation systems”. Rectangular ducts and fittings are designed for low- and medium-pressure indoor HVAC systems. Rectangular ducts and fittings made from galvanised, stainless steel and aluminium. Alnor also fabricates custom fittings to individual design requirements. The nominal size is a conventional dimension used to designate and calculate straight ducts and fittings. It is the internal dimension of sides a and b, where side a is exposed to view (Fig. 2). The length sizes of the sides at a smaller end of an adapter fitting are designated c and d, where side c is exposed to view. Dimension L is the effective length of a straight duct, which is added to the overall length of the ductwork system. Dimension l is the effective length of a fitting, which is added to the overall length of the ductwork system. The standard dimensions of ducts and fittings range between 100 mm and 2000 mm for any side length. The ducts and fittings

below and above these sizes are available on request. Measurements of the surface area and the lead time for custom ductwork orders are subject to separate arrangements.

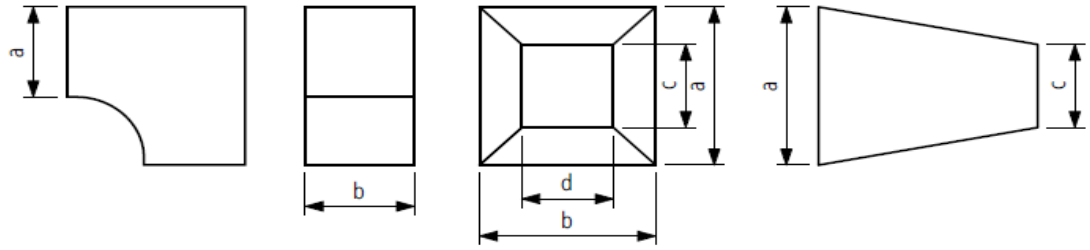

Figure 2 Dimension used to designate straight ducts and fittings

Ducts are made in four air tightness classes according to EN 1507, “Ventilation for buildings. Sheet metal air ducts with rectangular section. Requirements for strength and leakage”: Air tightness class A, B, C, D.
Rectangular ducts and fittings are fabricated from metal sheets which are hemmed and seamed, pressure-welded, or riveted. The ducts and fittings are available in low- and mediumpressure versions (min. vacuum / max. overpressure):

- class N design (low-pressure design): standard design from -500 Pa to +1000 Pa
- class S design (medium-pressure design): from -750 Pa to 2000 Pa

The dimensional tolerances and metal sheet thickness are selected according to the following criteria:

- length of the long side of a straight duct,
- the dimension of the longest side of the connection crosssection of the fitting.

Rectangular ducts and fittings can be fabricated from galvanised, stainless steel and alumium sheet on request (Table 1, 2).

Table 1. Dimensional tolerances and minimum steel sheet thickness sizes

Dimensions and tolerance compatible	
Dimensions of the long side	Minimum sheet thickness:
100-500 mm	0.6 mm
501-800 mm	0.8 mm
801-2000 mm	0.7 mm

Table 2. Minimum stainless steel sheet thickness sizes

Dimensions and tolerance compatible	
Dimensions of the long side	Minimum sheet thickness:
100-500 mm	0,6 mm
501-2000 mm	0,7 mm

SPIRAL® system is round ventilation ducts and fittings with gaskets system that are used to extract and distribute fresh air from rooms in industrial, single-family and multi-family buildings.

The ventilation piping includes spiro pipes, pressed and segmented elbows, tees, reducers, nipples, plugs, and stub pipes - pressed and segmented in diameters from 80 to 1600 mm.
The gaskets are made from uniform EPDM rubber. The gasket is mounted at the end of the fitting and held tight in the fitting's hemmed rim. This keeps the gasket firmly in place during and after the installation phase. This material has superior resistance to ozone, UV radiation, and temperature variations, thus providing longer service life. EPDM gaskets can withstand temperatures of -30˚C to 100˚C. For heat-resistant HVAC systems, SPIRAL® system is also available with silicone gaskets which can withstand continuous temperatures of -70˚C to 150°C and transient temperatures of 90˚C to 200˚C.
SPIRAL® system round ducts and fittings are certified for compliance with hygienic standards B.BK.60112.0225.2022 (valid through 22.08.2027) made from galvanized or stainless steel sheet.
SPIRAL system meets the requirements of PN-EN 12237 for air tightness class D (Certificate no. 0103/07). The high-quality of workmanship and factory-installed rubber gaskets enable easy and quick assembly of ventilation ductwork. Ductwork based on SPIRAL® system components guarantees long and leak-proof service life and requires no additional sealants.
All additional technical information about the product is available on the manufacturer's website.

LIFE CYCLE ASSESSMENT (LCA) – general rules applied

Unit

The declared unit is 1 kg of product (ventilation ducts and fittings) made of steel (averaged). This EPD is applicable for rigid rectangular cross-section ventilation ducts and fittings (a duct is in a general way the envelope of the space in which the air is carried) with integrated sealing solution made of galvanized steel (and stainless) in various lengths, and cross-section dimensions depending on the application (as defined in standard EN 12792:2003, PN-EN 1505:2001, EN 1506:2007), designed to provide, extract, or circulate air in residential, commercial, and industrial buildings. The LCI and LCIA results in this EPD relates to 1 kg of ventilation duct.

System boundary

The life cycle analysis (LCA) of the declared products covers: product stage – modules A1-A3, A4 transport to site, A5 installation, and end of life – modules C1-C4 and benefits and loads beyond the system boundary – module D (cradle-to-gate with options) in accordance with EN 15804+A2 and ITB PCR A . Energy and water consumption, emissions as well as information on generated wastes were inventoried and were included in the calculations. 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 rules used for this EPD are based on general ITB ’s document PCR A. Production of the covered steel structures is a line process (as presented in Figure 3) conducted in the manufacturing plant located in Wola Mrokowska, Poland. Input and output data from the production is inventoried and allocated to the production on the mass basis. The declaration covers all steel ventilation ducts and fittings (rectangular and round) manufactured in the plant. Their production resources and processing stages are basically similar, so it is possible to average the production by product weight.

System limits

In the assessment, all available data from production have been considered, i.e. all raw materials/elements used as per formulation process, utilized thermal energy for heating, and electric power consumption. Thus, material and energy flows contributing less than 1 % of mass or energy have been considered. It can be assumed that the total sum of neglected processes does not exceed 1 % of energy usage and mass per modules A or D. Machines and facilities required during production are neglected. The packaging products (stretch foil, wooden pallets, etc.) are included.

Modules A1 and A2*: Raw materials supply and transport*

Modules A1 and A2 present the extraction and processing of raw materials (mainly HDG steel, 98%) and transport to the production site. Steel sheets are a commonly used semi-finished product for the production of ventilation ducts and fittings. The steel used comes from domestic steel suppliers in EAF and BOF technology. Module A2 (transport) covers truck transport and uses Polish and European averages for fuel data.

Module A3: *Production*

At the beginning of the production process, raw material is ordered in the form of galvanized or stainless steel (1,5%). After initial quality control and cutting, the material is transported to the production hall where the processing of the raw material begins. Then, in processes such as bending, stamping, rolling, welding, clamping, and installation of gaskets (EPDM) and sealants (acrylic), ventilation ducts and fittings are created. Finished products are transported to the warehouse. Orders are picked and packed in the warehouse and, after being delivered to the recipient, they are assembled at the place of delivery. The production processes carried out at plant in Wola Mrokowska are shown in Figure 3.

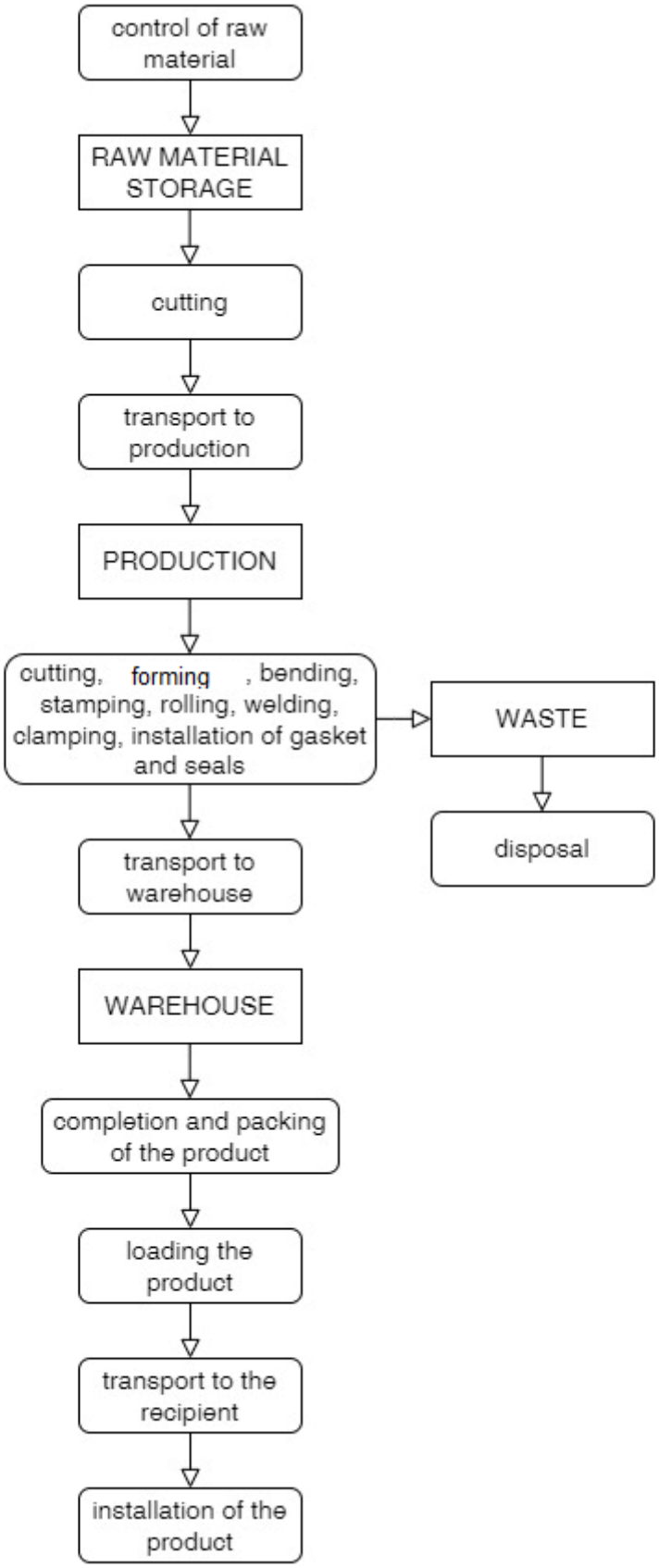

Figure 3. Diagram of the manufacturing process of steel ventilation ducts and fittings

Module A4 – A5: ***Transport to consumer and Installation***

Transport of steel ventilation ducts and fittings from warehouse to the construction site is carried out using lorries. Loads on trucks are secured with belts with tensioners or chains. Vehicle transport at distance 100 km is considered (emission standard: Euro 5) with 100% load capacity. During the installation process, electrical devices are used to fasten the elements.

Modules *C and D: End-of-life (EOL)*

In the adapted end-of-life scenario 100 % of steel ventilation ducts and fittings are demounted using electric tools, the de-constructed steel products are transported to a steel mill distant by 50 km on > 16t lorry EURO 5 where are used as steel scrap to produce a new steel. The recycling potential of C3 module is 98% and it is assumed that only 2% of the products will end up in a landfill – C4 module (Table 3). Module D presents credits resulting from the recycling of the steel scrap (used for steel production), calculated in accordance with the approach developed by World Steel Association.

Table 3. End-of-life scenario for steel ventilation ducts and fittings

Material	Material recovery	Recycling	Landfilling
Steel scrap	100%	98%	2%

Data collection period

The data for manufacture of the declared products refer to period between 01.01.2021 – 31.12.2021 (1 year). The life cycle assessments were prepared for Poland and Europe as reference area.

Data quality

The data selected for LCA originate from ITB-LCI questionnaires completed by Alnor Systemy Wentylacji Sp. z o. o. and 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 is judged as good. The background data for the processes come from the following resources database Ecoinvent v.3.10 and specific suppliers (EPDs). Specific (LCI) data quality analysis was a part of the input data verification.

Assumptions and estimates

The impacts of the representative products were aggregated using weighted average.

Calculation rules

LCA was performed using ITB-LCA tool developed in accordance with EN15804+A2. Emission of greenhouse gases was calculated using the IPCC 2013 GWP method with a 100-year horizon. Emission of acidifying substances, Emission of substances to water contributing to oxygen depletion, Emission of gases that contribute to the creation of ground-level ozone, Abiotic depletion, and ozone depletion emissions where all calculated with the CML-IA baseline method

Additional information

Polish electricity (Ecoinvent v 3.10 supplemented by actual national KOBiZE data) emission factor used is 0.698 kg CO_2/kWh. As a general rule, no particular environmental or health protection measures other than those specified by law are necessary. The ventilation ducts do not contain substances listed in the ”Candidate List of Substances of Very High Concern for authorisation”

LIFE CYCLE ASSESSMENT (LCA) – Results

Declared unit

The declaration refers to declared unit (DU) – 1 kg of steel ventilation ducts and fittings produced in Poland. The following life cycle modules (Table 4) were included in the analysis. The following tables 5-8 show the environmental impacts of the life cycle of selected modules (A1-A5+C1-C4+D).

Table 4 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**

Table 5 Life cycle assessment (LCA) results of the product – environmental impacts (DU: 1 kg)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Global Warming Potential	eq. kg CO_2	1.75E+00	1.08E-01	4.61E-01	2.32E+00	1.67E-02	3.66E-01	6.81E-04	8.34E-03	5.58E-03	5.32E-04	-8.07E-01
Greenhouse potential - fossil	eq. kg CO_2	1.90E+00	1.07E-01	4.61E-01	2.46E+00	1.66E-02	3.64E-01	7.13E-04	8.31E-03	5.58E-03	5.26E-04	-8.22E-01
Greenhouse potential - biogenic	eq. kg CO_2	-1.50E-01	3.67E-04	8.86E-03	-1.40E-01	5.68E-05	1.95E-03	-3.66E-05	2.84E-05	1.60E-04	5.31E-06	-1.55E-02
Global warming potential - land use and land use change	eq. kg CO_2	5.68E-03	4.22E-05	1.08E-04	5.83E-03	6.52E-06	7.15E-05	4.63E-06	3.26E-06	1.92E-06	5.33E-07	-3.63E-04
Stratospheric ozone depletion potential	eq. kg CFC 11	1.10E-07	2.49E-08	1.48E-08	1.50E-07	3.85E-09	5.09E-08	6.74E-17	1.92E-09	1.12E-10	1.60E-10	-2.96E-08
Soil and water acidification potential	eq. mol H+	2.94E-02	4.36E-04	3.37E-03	3.32E-02	6.75E-05	8.22E-04	3.45E-06	3.37E-05	6.08E-05	4.44E-06	-3.29E-03
Eutrophication potential - freshwater	eq. kg P	9.93E-04	7.22E-06	5.61E-04	1.56E-03	1.12E-06	1.30E-05	2.45E-09	5.59E-07	1.04E-05	1.53E-07	-1.71E-03
Eutrophication potential - seawater	eq. kg N	2.51E-03	1.32E-04	5.10E-04	3.15E-03	2.04E-05	2.49E-04	1.61E-06	1.02E-05	8.80E-06	1.53E-06	-1.20E-03
Eutrophication potential - terrestrial	eq. mol N	1.12E-01	1.44E-03	4.20E-03	1.17E-01	2.22E-04	2.71E-03	1.79E-05	1.11E-04	7.44E-05	1.67E-05	-7.77E-03
Potential for photochemical ozone synthesis	eq. kg NMVOC	7.82E-03	4.40E-04	1.26E-03	9.52E-03	6.80E-05	8.63E-04	4.52E-06	3.40E-05	2.08E-05	4.82E-06	-4.33E-03
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	8.98E-05	3.81E-07	1.51E-06	9.17E-05	5.89E-08	4.76E-07	6.93E-11	2.95E-08	2.67E-08	1.78E-09	-1.48E-05
Abiotic depletion potential - fossil fuels	MJ	2.31E+01	1.59E+00	6.21E+00	3.09E+01	2.47E-01	8.20E+00	9.01E-03	1.23E-01	9.28E-02	1.22E-02	-1.02E+01
Water deprivation potential	eq. m^3	1.09E+00	7.37E-03	1.08E-01	1.21E+00	1.14E-03	2.16E-02	7.69E-06	5.70E-04	1.92E-03	7.06E-05	-1.38E-01

Table 6 Life cycle assessment (LCA) results of the 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

Table 7 Life cycle assessment (LCA) results of the 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	1.51E+00	2.29E-02	3.70E-01	1.90E+00	3.54E-03	2.50E-01	6.24E-04	1.77E-03	6.88E-03	2.14E-04	-3.92E-01
Consumption of renewable primary energy resources used as raw materials	MJ	1.75E+00	0.00E+00	0.00E+00	1.75E+00	0.00E+00	-3.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.48E-01
Total consumption of renewable primary energy resources	MJ	3.26E+00	2.29E-02	3.73E-01	3.65E+00	3.54E-03	2.13E-01	6.24E-04	1.77E-03	6.88E-03	2.14E-04	-5.40E-01
Consumption of non-renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	2.35E+01	1.59E+00	5.01E+00	3.01E+01	2.47E-01	5.98E+00	9.05E-03	1.23E-01	9.31E-02	1.31E-02	-2.53E+00
Consumption of non-renewable primary energy resources used as raw materials	MJ	8.58E-01	0.00E+00	1.35E+00	2.21E+00	0.00E+00	2.45E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.41E+00
Total consumption of non-renewable primary energy resources	MJ	2.43E+01	1.59E+00	6.36E+00	3.23E+01	2.47E-01	8.43E+00	9.05E-03	1.23E-01	9.31E-02	1.31E-02	-4.94E+00
Consumption of secondary materials	kg	4.50E-01	5.35E-04	4.75E-04	4.51E-01	8.27E-05	2.01E-03	0.00E+00	4.14E-05	8.48E-06	0.00E+00	-8.82E-02
Consumption of renew. secondary fuels	MJ	5.84E-02	5.89E-06	2.58E-06	5.84E-02	9.11E-07	0.00E+00	0.00E+00	4.56E-07	4.73E-08	0.00E+00	-3.17E-03
Consumption of non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	4.04E-03	4.04E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.51E-05	0.00E+00	0.00E+00
Net consumption of freshwater	m^3	9.76E-03	2.01E-04	2.37E-03	1.23E-02	3.10E-05	4.90E-04	7.21E-07	1.55E-05	2.52E-05	1.90E-06	-6.56E-03

Table 8 Life cycle assessment (LCA) results of the product – waste categories (DU: 1 kg)

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	8.66E-02	1.79E-03	1.50E-04	8.85E-02	2.77E-04	2.96E-10	4.78E-14	1.38E-04	9.60E-07	1.91E-08	-8.38E-02
Non-hazardous waste	kg	1.15E+00	3.18E-02	5.58E-03	1.19E+00	4.92E-03	8.06E-04	1.47E-06	2.46E-03	4.99E-05	5.01E-02	-5.33E-01
Radioactive waste	kg	7.01E-05	1.19E-07	4.02E-06	7.42E-05	1.84E-08	4.52E-06	1.68E-08	9.21E-09	6.96E-08	7.39E-08	-8.02E-06
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	5.53E-05	4.94E-06	1.65E-03	1.71E-03	7.64E-07	1.19E-02	0.00E+00	3.82E-07	9.60E-08	0.00E+00	-6.97E-05
Materials for energy recovery	kg	1.33E-06	3.99E-08	4.59E-08	1.42E-06	6.18E-09	0.00E+00	0.00E+00	3.09E-09	8.40E-10	0.00E+00	-3.18E-07
Exported Energy	MJ	3.73E-01	0.00E+00	1.51E-02	3.88E-01	0.00E+00	1.60E-01	0.00E+00	0.00E+00	2.77E-04	0.00E+00	-1.16E-01

Verification

The process of verification of this EPD is in accordance with ISO 14025 and ISO 21930. 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: Halina Prejzner, PhD. Eng. LCI audit and verification: Filip Poznański, M.Sc. Eng. LCA, LCI audit and input data 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 1090-2:2018 - Execution of steel structures and aluminium structures - Technical requirements for steel structures
- PN-EN 1090-1+A1:2012 - Wykonanie konstrukcji stalowych i aluminiowych -- Część 1: Zasady oceny zgodności elementów konstrukcyjnych
- 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
- ISO 20915:2018 Life cycle inventory calculation methodology for steel products
- KOBiZE Wskaźniki emisyjności CO_2, SO_2, NOx, CO i pyłu całkowitego dla energii elektrycznej. December 2021
- World Steel Association 2017 Life Cycle inventory methodology report for steel products
- https://ecoinvent.org/

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CERTIFICATE № 637/2024
of TYPE III ENVIRONMENTAL DECLARATION

Products:

Steel ventilation ducts and fittings

Manufacturer:

Alnor Systemy Wentylacji Sp. z o.o.
Zwierzyniecka 8b, 00-719 Warszawa, 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 on 20th June 2024 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

INSTYTUT TECHNIKI BUDOWLANEJ

Deputy Director for Research and Innovation
Krzysztof Kuczyński, PhD

Warsaw, June 2024