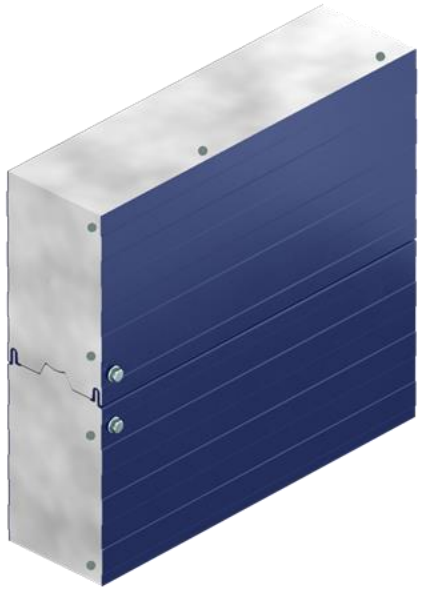


ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

KS TP QuadCore® Protect Wall Panel
Kingspan Sp. z o.o.



EPD HUB, HUB-5530
Published on 01.03.2026, last updated on 01.03.2026, valid until 01.03.2031

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	Kingspan Sp. z o.o.
Address	Przemyslowa 20 27-300 Lipsko, Poland
Contact details	info@kingspan.pl
Website	www.kingspan.com

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A5, and modules C1-C4, D
EPD author	Marta Kubinska, Kingspan CEME
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Magaly Gonzalez Vazquez as an authorized verifier for EPD Hub

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	KS TP QuadCore® Protect Wall Panel
Additional labels	-
Product reference	-
Place(s) of raw material origin	EU
Place of production	Lipsko, Poland
Place(s) of installation and use	EU
Period for data	1/01/2024-31/12/2024
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 (%)	61,3

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m^2
Declared unit mass	15,58 kg
Mass of packaging	0,154 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	39,6
GWP-total, A1-A3 ($kgCO_2e$)	39,7
Secondary material, inputs (%)	13,7
Secondary material, outputs (%)	86,5
Total energy use, A1-A3 (kWh)	163
Net freshwater use, A1-A3 (m^3)	8,98

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Kingspan Sp. z o.o. has been on the market since 2003, with its headquarters located in Lipsko. Kingspan exports products to almost 50 countries across five continents. The company specializes in the production of construction materials, including sandwich panels with both MW and PIR insulation cores, modular cold rooms, and cold store doors. Moreover, Kingspan also offers a wide variety of ancillary products that supplement the building envelope.

PRODUCT DESCRIPTION

KS TP QuadCore® Protect Wall Panels are reinforced sandwich panels designed for applications where enhanced burglary protection is required. The product is classified as protection class 2 in accordance with SSF 1047.

The panels consist of a rigid polyisocyanurate (PIR) foam insulation core, with a density of 37 kg/m³, placed between two organic-coated steel sheets and reinforced with a metal mesh. They are designed for structural use in both external and internal walls or ceilings and offer high thermal and acoustic insulation, improving energy efficiency and noise reduction.

KS TP Protect Wall Panels are available in thicknesses of 120, 150, 170 and 200 mm. This EPD covers panels with a 120 mm thick QuadCore® insulation core. Information on other available thicknesses is provided in the annex.

Further information can be found at: www.kingspan.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	66,8	EU
Minerals	-	-
Fossil materials	33,2	EU
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

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m^2
Mass per declared unit	15,58 kg
Functional unit	-
Reference service life	50 years

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	ND	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

Not declared = ND.

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.

QuadCore® insulated panels are manufactured through a continuous process in which the insulation core is bonded to the external metal facings. All components are sourced from Europe and shipped to the manufacturing site in Lipsko, Poland. Insulated panels production begins with feeding steel coils for the inner and outer layers into the production line. These sheets are then shaped into the specified profile. Next, the foam mixture is applied to the bottom liner, and as it expands, it connects with the top liner, creating a chemical bond between the two steel sheets. The energy and fuels used in the manufacturing process, including electricity, LPG and heating oil, are accounted for. The environmental profile of energy sources is modelled for average Polish conditions. The loss of material at manufacturing phase is considered within this EPD. Both scrap steel and foam waste are collected and sent to landfill (a distance of 20 km).

The finished product is stored at the manufacturing site before being shipped to the customer. It is transported in bundles, placed on EPS pads, with shielding foils on the sides and top. The whole package is wrapped in stretch plastic foil.

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.

This EDP does not cover the transport phase (A4). Air, soil, and water impacts during the transport phase have not been studied. Transport from production plant to the construction site, as well as resources needed for installation of the product have not been considered.

It is assumed that polyethylene packaging waste is collected and sent to a recycling company and polystyrene waste is incinerated (a transportation distance of 20 km).

PRODUCT USE AND MAINTENANCE (B1-B7)

Air, soil, and water impacts during the use phase have not been studied.
The reference service life of 50 years is based on data from EPDs for sandwich panels with similar material compositions and manufacturing processes.

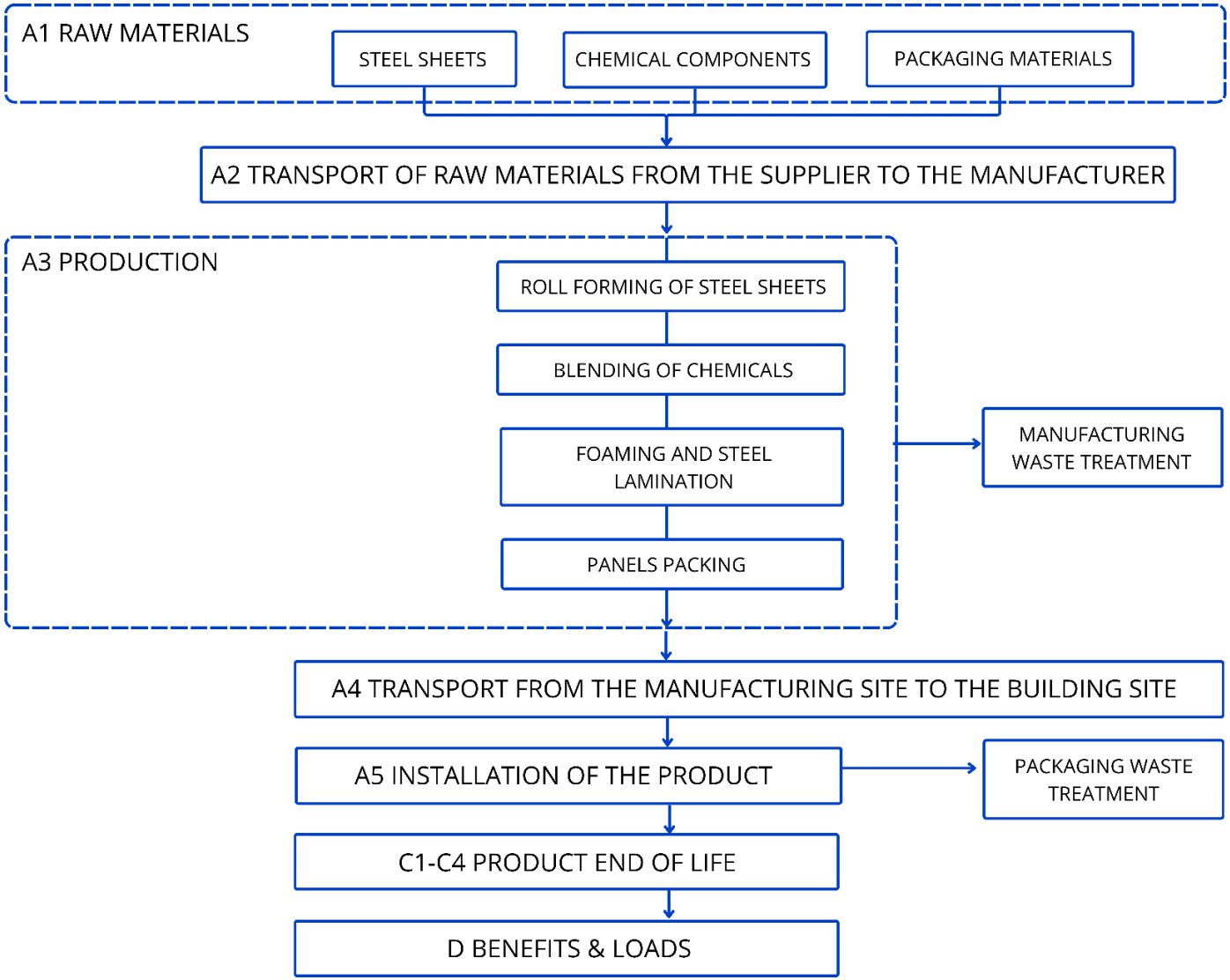
PRODUCT END OF LIFE (C1-C4, D)

At the end of the product's life cycle, it is assumed that the panels are dismantled using electric tools, with an energy consumption of 0.89 MJ per square meter of panel removed, based on data from similar assessments (C1). Steel facings and insulation core are separated. All generated waste is collected and transported to waste treatment facilities located within the country of installation, with an assumed transport distance of 20 km by lorry (C2).

For steel components, approximately 95% is assumed to be recycled (C3), while the remaining 5% is sent to landfill for final disposal (C4). The recycling rates for steel are based on data from the World Steel Association (2024). For the insulation core, 17.4% is assumed to be recycled, 52.2% incinerated, and the remaining 30.4% sent to landfill, based on Plastics Europe data (2024). The selected end of life scenario is currently in use and represents one of the most likely and commonly applied approaches for similar products across the EU territory.

Module D considers the avoided production of primary steel and polyethylene, with associated potential benefits and loads from recycling reported accordingly. Additional benefits and impacts related to the incineration of packaging materials (electricity and heat recovery) are also included.

MANUFACTURING PROCESS



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.

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 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 material	Allocated by mass or volume
Ancillary materials	Not applicable
Manufacturing energy and waste	Allocated by mass or volume

PRODUCT & MANUFACTURING SITES GROUPING

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

This EPD is product and factory specific.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification 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'.

EN 14509:2013 Self-supporting double skin metal faced insulating panels - Factory made products - Specifications
World Steel Association, Guidance on methodologies for modelling reuse and remanufacture in LCA Studies, 2024
Plastics Europe, The Circular Economy for Plastics - A European Analysis, 2024

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	3,67E+01	1,76E+00	1,26E+00	3,97E+01	ND	2,25E-01	ND	ND	ND	ND	ND	ND	ND	2,60E-01	7,47E-02	8,01E+00	1,31E-02	-1,43E+01
GWP – fossil	kg CO_2e	3,66E+01	1,76E+00	1,26E+00	3,96E+01	ND	2,25E-01	ND	ND	ND	ND	ND	ND	ND	2,61E-01	7,46E-02	8,01E+00	1,31E-02	-1,43E+01
GWP – biogenic	kg CO_2e	9,07E-02	2,64E-04	1,13E-03	9,21E-02	ND	-7,20E-06	ND	ND	ND	ND	ND	ND	ND	-4,51E-04	1,45E-05	-9,72E-04	-4,18E-06	3,87E-04
GWP – LULUC	kg CO_2e	1,66E-02	7,81E-04	4,38E-04	1,78E-02	ND	8,88E-06	ND	ND	ND	ND	ND	ND	ND	1,75E-05	2,50E-05	3,70E-04	7,50E-06	-2,01E-03
Ozone depletion pot.	kg CFC_{-11}e	1,31E-05	3,52E-08	3,88E-08	1,32E-05	ND	8,17E-11	ND	ND	ND	ND	ND	ND	ND	2,27E-09	1,49E-09	9,99E-09	3,80E-10	-5,46E-08
Acidification potential	mol H^+e	9,06E-02	4,58E-03	5,93E-03	1,01E-01	ND	5,01E-05	ND	ND	ND	ND	ND	ND	ND	1,70E-03	1,46E-04	1,32E-02	9,30E-05	-6,04E-02
EP-freshwater[2)]	kg Pe	6,32E-04	1,51E-04	2,42E-04	1,02E-03	ND	1,80E-06	ND	ND	ND	ND	ND	ND	ND	8,62E-05	4,87E-06	1,84E-04	1,08E-06	-5,77E-03
EP-marine	kg Ne	2,33E-02	1,27E-03	9,23E-04	2,55E-02	ND	2,84E-05	ND	ND	ND	ND	ND	ND	ND	2,13E-04	3,45E-05	1,92E-02	3,55E-05	-1,25E-02
EP-terrestrial	mol Ne	2,38E-01	1,37E-02	9,59E-03	2,61E-01	ND	2,07E-04	ND	ND	ND	ND	ND	ND	ND	2,18E-03	3,73E-04	6,86E-02	3,87E-04	-1,37E-01
POCP ("smog")[3)]	kg NMVOCe	7,67E-02	7,35E-03	6,02E-03	9,01E-02	ND	5,67E-05	ND	ND	ND	ND	ND	ND	ND	6,29E-04	2,47E-04	1,63E-02	1,39E-04	-4,69E-02
ADP-minerals & metals[4)]	kg Sbe	8,92E-01	5,43E-06	2,58E-06	8,92E-01	ND	6,01E-08	ND	ND	ND	ND	ND	ND	ND	1,62E-07	2,45E-07	1,67E-05	2,09E-08	-1,27E-04
ADP-fossil resources	MJ	6,15E+02	2,57E+01	3,41E+01	6,75E+02	ND	7,41E-02	ND	ND	ND	ND	ND	ND	ND	2,83E+00	1,04E+00	7,45E+00	3,22E-01	-1,33E+02
Water use[5)]	m^3e depr.	-2,36E+00	1,55E-01	4,11E-01	-1,79E+00	ND	5,37E-03	ND	ND	ND	ND	ND	ND	ND	1,91E-02	5,07E-03	5,99E-01	9,29E-04	-2,24E+00

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	3,24E-07	1,52E-07	3,83E-08	5,15E-07	ND	5,47E-10	ND	ND	ND	ND	ND	ND	ND	2,56E-09	4,63E-09	4,01E-07	2,12E-09	-9,83E-07
Ionizing radiation[6]	kBq U235e	4,00E-01	4,98E-02	3,23E-02	4,82E-01	ND	4,22E-04	ND	ND	ND	ND	ND	ND	ND	1,73E-03	1,59E-03	2,97E-02	2,02E-04	4,91E-01
Ecotoxicity (freshwater)	CTUe	1,43E+02	3,41E+00	1,06E+01	1,57E+02	ND	2,21E-01	ND	ND	ND	ND	ND	ND	ND	5,28E+00	1,50E-01	3,11E+01	2,70E-02	6,04E+01
Human toxicity, cancer	CTUh	5,92E-09	3,09E-10	1,73E-10	6,40E-09	ND	1,94E-11	ND	ND	ND	ND	ND	ND	ND	2,06E-11	1,16E-11	3,30E-09	2,42E-12	-2,27E-09
Human tox. non-cancer	CTUh	3,44E-07	1,62E-08	6,46E-09	3,66E-07	ND	5,91E-10	ND	ND	ND	ND	ND	ND	ND	1,47E-09	6,09E-10	4,51E-08	5,56E-11	-1,13E-07
SQP[7]	-	1,49E+01	2,11E+01	3,47E+00	3,95E+01	ND	9,48E-02	ND	ND	ND	ND	ND	ND	ND	5,10E-01	5,38E-01	6,96E+00	6,34E-01	-4,48E+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	4,18E+01	6,23E-01	7,36E-01	4,32E+01	ND	6,58E-03	ND	ND	ND	ND	ND	ND	ND	1,40E-01	2,04E-02	6,56E-01	3,11E-03	-9,56E+00
Renew. PER as material	MJ	2,09E-02	0,00E+00	-7,26E-04	2,02E-02	ND	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	-2,02E-02	0,00E+00
Total use of renew. PER	MJ	4,18E+01	6,23E-01	7,35E-01	4,32E+01	ND	6,58E-03	ND	ND	ND	ND	ND	ND	ND	1,40E-01	2,04E-02	6,56E-01	-1,71E-02	-9,56E+00
Non-re. PER as energy	MJ	5,09E+02	2,57E+01	9,15E+00	5,44E+02	ND	-6,23E+00	ND	ND	ND	ND	ND	ND	ND	2,83E+00	1,04E+00	-1,03E+02	-4,82E+01	-1,34E+02
Non-re. PER as material	MJ	1,38E+02	0,00E+00	1,49E+00	1,40E+02	ND	-6,31E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-9,28E+01	-4,08E+01	-3,03E+01
Total use of non-re. PER	MJ	6,48E+02	2,57E+01	1,06E+01	6,84E+02	ND	-1,25E+01	ND	ND	ND	ND	ND	ND	ND	2,83E+00	1,04E+00	-1,96E+02	-8,90E+01	-1,64E+02
Secondary materials	kg	2,14E+00	1,32E-02	4,13E-03	2,16E+00	ND	3,25E-04	ND	ND	ND	ND	ND	ND	ND	2,48E-04	4,57E-04	5,43E-03	8,10E-05	7,19E+00
Renew. secondary fuels	MJ	3,70E-02	1,40E-04	2,68E-03	3,98E-02	ND	2,57E-06	ND	ND	ND	ND	ND	ND	ND	1,12E-06	4,64E-06	2,28E-04	1,68E-06	-1,65E-03
Non-ren. secondary fuels	MJ	1,84E-01	0,00E+00	0,00E+00	1,84E-01	ND	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
Use of net fresh water	m^3	8,96E+00	4,35E-03	9,89E-03	8,98E+00	ND	6,90E-05	ND	ND	ND	ND	ND	ND	ND	4,54E-04	1,43E-04	1,25E-02	3,35E-04	-3,99E-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	1,31E+00	4,32E-02	9,12E-02	1,44E+00	ND	2,35E-03	ND	ND	ND	ND	ND	ND	ND	4,02E-02	1,36E-03	1,56E-01	3,56E-04	-4,31E+00
Non-hazardous waste	kg	3,63E+01	9,25E-01	2,76E+00	4,00E+01	ND	9,84E-02	ND	ND	ND	ND	ND	ND	ND	4,32E-01	3,19E-02	4,66E+00	8,13E-03	-3,50E+01
Radioactive waste	kg	3,75E-03	1,25E-05	8,89E-06	3,77E-03	ND	1,08E-07	ND	ND	ND	ND	ND	ND	ND	4,28E-07	3,98E-07	7,59E-06	4,94E-08	1,28E-04

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	5,84E-03	0,00E+00	0,00E+00	5,84E-03	ND	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	1,44E-01	0,00E+00	0,00E+00	1,44E-01	ND	8,88E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,08E+01	0,00E+00	0,00E+00
Materials for energy rec	kg	7,66E-03	0,00E+00	0,00E+00	7,66E-03	ND	6,54E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,69E+00	0,00E+00	0,00E+00
Exported energy	MJ	3,34E-02	0,00E+00	0,00E+00	3,34E-02	ND	1,85E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	6,46E+00	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	2,78E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	9,73E-01	0,00E+00	0,00E+00
Exported energy – Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	1,57E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,49E+00	0,00E+00	0,00E+00

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	3,66E+01	1,76E+00	1,26E+00	3,96E+01	ND	2,25E-01	ND	ND	ND	ND	ND	ND	ND	2,61E-01	7,46E-02	8,01E+00	1,31E-02	-1,43E+01

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. Electricity, medium voltage, residual mix, Poland, Ecoinvent, 1.05 kgCO2e/kWh
2. Market for kerosene, Poland, Ecoinvent, 0.93 kgCO2e/kg
3. Market for liquefied petroleum gas, Poland, Ecoinvent, 1.10 kgCO2e/kg

Installation scenario documentation - A5 (Installation waste)

1. Exported Energy: Electricity, Ecoinvent, 0.278 MJ
2. Exported Energy: Thermal, Ecoinvent, 1.569 MJ
3. Treatment of waste polyethylene, for recycling, unsorted, sorting, Ecoinvent, Materials for recycling, 0.0888 kg
4. Treatment of waste polystyrene, municipal incineration, Ecoinvent, Materials for energy recovery, 0.0654 kg

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

1. Electricity, medium voltage, residual mix, Ecoinvent, 0.89 MJ
2. Exported Energy: Electricity, Ecoinvent, 0.97322 MJ
3. Exported Energy: Thermal, Ecoinvent, 5.4854 MJ
4. Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 9.89487 kg
5. Treatment of scrap steel, inert material landfill, Ecoinvent, 0.52078 kg
6. Treatment of waste polyurethane seal, sorting plant, Ecoinvent, Materials for recycling, 0.89732 kg
7. Treatment of waste polyurethane, inert material landfill, Ecoinvent, 1.58191 kg
8. Treatment of waste polyurethane, municipal incineration, Ecoinvent, Materials for energy recovery, 2.69195 kg

Scenario information	Value
Scenario assumptions e.g. transportation	Transport means are assumed to be trucks. European fuel average is applied.

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 are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to 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

Magaly Gonzalez Vazquez as an authorized verifier for EPD Hub Limited
01.03.2026



ANNEX I

CORE ENVIRONMENTAL IMPACT INDICATORS BY PRODUCT THICKNESS

Impact category		Unit	A1-A3	A1-A3	A1-A3	A1-A3
Product Thickness		mm	120	150	170	200
Product Weight		kg/m2	15.57	16.85	17.69	18.98
EN 15804+A2	GWP – total	kg CO2e	3.97E+01	4.31E+01	4.54E+01	4.88E+01
	GWP – fossil	kg CO2e	3.96E+01	4.30E+01	4.52E+01	4.87E+01
	GWP – biogenic	kg CO2e	9.21E-02	9.97E-02	1.04E-01	1.11E-01
	GWP – LULUC	kg CO2e	1.78E-02	2.00E-02	2.15E-02	2.37E-02
	Ozone depletion pot.	kg CFC-11e	1.32E-05	1.65E-05	1.89E-05	2.30E-05
	Acidification potential	mol H+e	1.01E-01	1.09E-01	1.14E-01	1.21E-01
	EP-freshwater	kg Pe	1.02E-03	1.12E-03	1.18E-03	1.28E-03
	EP-marine	kg Ne	2.55E-02	2.74E-02	2.87E-02	3.07E-02
	EP-terrestrial	mol Ne	2.61E-01	2.81E-01	2.94E-01	3.15E-01
	POCP (“smog”)	kg NMVOCe	9.01E-02	9.77E-02	1.03E-01	1.10E-01
	ADP-minerals & metals	kg Sbe	8.92E-01	8.92E-01	1.03E+00	1.09E+00
	ADP-fossil resources	MJ	6.75E+02	7.71E+02	8.33E+02	9.29E+02
	Water use	m3e depr.	-1.79E+00	-3.13E+00	-4.19E+00	-5.58E+00

Impact category		Unit	A-C	A-C	A-C	A-C
Product Thickness		mm	120	150	170	200
Product Weight		kg/m2	15.57	16.85	17.69	18.98
EN 15804+A2	GWP – total	kg CO2e	4.83E+01	5.37E+01	5.72E+01	6.26E+01
	GWP – fossil	kg CO2e	4.82E+01	5.35E+01	5.70E+01	6.24E+01
	GWP – biogenic	kg CO2e	9.07E-02	9.82E-02	1.02E-01	1.09E-01
	GWP – LULUC	kg CO2e	1.82E-02	2.05E-02	2.20E-02	2.42E-02
	Ozone depletion pot.	kg CFC-11e	1.32E-05	1.65E-05	1.89E-05	2.30E-05
	Acidification potential	mol H+e	1.16E-01	1.27E-01	1.34E-01	1.43E-01
	EP-freshwater	kg Pe	1.30E-03	1.41E-03	1.47E-03	1.59E-03
	EP-marine	kg Ne	4.50E-02	5.15E-02	5.58E-02	6.24E-02
	EP-terrestrial	mol Ne	3.33E-01	3.68E-01	3.91E-01	4.28E-01
	POCP (“smog”)	kg NMVOCe	1.07E-01	1.19E-01	1.26E-01	1.37E-01
	ADP-minerals & metals	kg Sbe	8.92E-01	8.92E-01	1.03E+00	1.09E+00
	ADP-fossil resources	MJ	6.87E+02	7.84E+02	8.47E+02	9.44E+02
	Water use	m3e depr.	-1.16E+00	-2.37E+00	-3.34E+00	-4.59E+00