

ENVIRONMENTAL PRODUCT DECLARATION

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

Kingspan sandwich panels with IPN core thickness 100mm

Kingspan Kereskedelmi Kft



EPD HUB, HUB-2513

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GENERAL INFORMATION

MANUFACTURER

Manufacturer	Kingspan Kereskedelmi Kft
Address	Újhartyán, Horka dűlő 1, 2367, Hungary
Contact details	info@kingspan.hu
Website	www.kingspan.hu

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023
Sector	Construction 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, D
EPD author	Artur Krzywulski, Kingspan CEME
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited

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

PRODUCT

Product name	**Kingspan sandwich panels with IPN core thickness 100mm**
Additional labels	KS AWP Architectural Wall Panel, KS AWP FLEX Architectural Wall Panel, Evolution (BMEVO) Architectural Wall Panel, Karrier B (BW) Architectural Wall Panel, Evolution Lite (EV) Architectural Wall Panel, KS RW Roof Panel, KS X-Dek™ XD Roof Panel, KS TC Wall Panel, KS TF Wall Panel, KS TL Wall Panel
Product reference	-
Place of production	Újhartyán, Horka dűlő 1, 2367, Hungary
Period for data	01.01.2023 - 31.12-2023
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	-

ENVIRONMENTAL DATA SUMMARY

Declared unit	1m^2
Declared unit mass	12,24kg
GWP-fossil, A1-A3 (kgCO_2e)	3,50E+01
GWP-total, A1-A3 (kgCO_2e)	3,46E+01
Secondary material, inputs (%)	2,03
Secondary material, outputs (%)	47,2
Total energy use, A1-A3 (kWh)	137
Net freshwater use, A1-A3 (m^3)	3,16

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Kingspan Kereskedelmi Kft. has been on the market since 1998 - and is a subsidiary of Kingspan Group, a global leader in manufacturing building products.

The Hungarian business is located in Ujhartyan, and in Felsolajos. Kingspan Kft. specializes in the production of construction materials, including sandwich panels with both MW and PIR insulation cores. Moreover, Kingspan also offers a wide variety of ancillary products that supplement the building envelope. The manufacturing plant in Ujhartyan produces insulated sandwich panels with IPN (isophenic) and QuadCore insulation core. The products are dedicated to external and internal wall applications, and as well as ceiling elements. The high thermal insulation properties make the IPN core panels default solutions for controlled environment applications such as cold-rooms, chill stores, cold stores and ULO chambers. The panels produced in Hungary are mainly delivered to the south-east countries of Europe. More information about the manufacturer and the products can be found at https://www.kingspan.com/hu/hu/ .

PRODUCT DESCRIPTION

Kingspan steel-faced sandwich insulated panels with insulation core made from IPN foam cover a wide range of panel types such as wall, ceiling, facade and roof panels. The Kingspan IPN is a proprietary self-blended formulation which allows Kingspan to manage and control the chemistry and performance of the thermal insulation of composite panels. The IPN rigid insulation foam is a new generation of Polyisocyanurate (PIR) rigid foam, engineered by Kingspan Panels to achieve exceptional performance of sandwich panels. The facings of Kingspan IPN sandwich panels are made from galvanized and coated carbon steel sheets according to EN 10346. The thickness of steel sheets is defined by project specific requirements and varies between 0.4mm and 0.7mm. The declared density of Kingspan IPN insulation foam is 37kg/m^3 for wall panels and 35kg/m^3 for roof panels. The panels are manufactured and certified according to European standard EN 14509:2013. The IPN core steel-faced sandwich panels are used as external and internal wall and ceiling elements, and as roof elements in industrial, commercial, residential and office buildings, hospitals, controlled temperature premises, clean rooms and in the food processing industry. The panels with IPN insulation core are available in thicknesses starting from 40mm up to 200mm. The products are also available in various modular widths, especially the product variants dedicated to facade finishes (Evolution).

The current EPD evaluation focuses on panels with IPN foam core thickness 100mm.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	69,75	EU
Minerals	0	EU
Fossil materials	30,25	EU
Bio-based materials	0	EU

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1m^2
Mass per declared unit	12.84 kg
Functional unit	-
Reference service life	50 years

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	0.098

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		
×	×	×	×	×	MND	MND	MND	MND	MND	MND	MND	×	×	×	×	×		
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 = MND. 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.

Kingspan IPN sandwich panels covered by this environmental product declaration are manufactured in Ujhartyan in Hungary. The production of sandwich panels is carried out on continuous production line as presented on the scheme below. All raw materials are transported to the manufacturing plant by road transport and short distance sea ferry. The manufacturing of insulated panels starts with the de-coiling of the internal and external steel coils. The liners are rolled into the desired profiled pattern. The IPN core formulation in liquid form is then sprayed on to the internal liner and rises to meet the external liner, creating a rigid bond between the two steel sheets. The panels leaving the manufacturing line are stacked on EPS blocks (for forklift transport), covered with corrugated cardboards and protected with EPS sheets and distance blocks. Finally, the whole bundle is wrapped with stretch foil.

The faces of composite sandwich panel faces are made of hot-dip galvanized and colour-coated steel sheets. Steel used in panels faces comes from European manufacturers and is manufactured and delivered according to relevant EU standards (EN 10346 and EN 10169). The most popular steel quality used in Kingspan sandwich panels is S280GD+Z275, there are other types possible depending on end use application. The steel sheets are coated with organic coatings according to EN 10169. The type, thickness and colour of organic coating depends on final application environment and customer requirements.

The Kingspan IPN sandwich panels insulation core is a modified polyisocyanurate (PIR) rigid foam, made of isocyanate (MDI), polyol, foaming agents with the addition of further components. The IPN foam is HCFC free and contains no SVHCs (Substances of Very High Concern - REACH).

Manufacturing waste from panels production - steel scrap and IPN foam waste (spills and cutoffs) - are sorted and collected separately. Steel scrap in 95% goes to recycling, the remaining 5% goes for landfill (rates based on World Steel Association data). The IPN foam waste goes to incineration(100%).

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.

Panels are transported to the construction site by means of road transport. The transportation distance is assumed to be an average of 400km. The insulated panels are made to order, specific to the building's requirements. Installation guides are available to assist the contractor with the correct installation of the product and any ancillaries. The installation scenario assumes steel fixings with an average weight consumption of 0.045kg/DU, and accessories made of steel coated sheets with an average consumption ratio of 0.45kg/DU. A conservative estimate of power necessary for installation works assumes electricity for a power tool (0.37kWh/DU) and diesel (10.53MJ/DU) for site handling.
Installation losses are estimated at 2% and, as well as packaging, are included as installation waste.
The steel scrap out of installation goes in 95% for recycling, and in 5% goes to landfill (rates based on World Steel Association data), IPN foam waste together with cardboards and the plastic packaging waste (mix of PE and EPS) goes for municipal incineration.

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.
The reference service life of 50 years is given as only additional information and is based on similar EPD's issued for sandwich panels with similar material specification and production technology.

PRODUCT END OF LIFE (C1-C4, D)

The end-of-life scenario for IPN sandwich considers demounting the sandwich panels from the building structure, transport to a reclamation facility, separation fo steel facings and IPN insulation core. For removal of the panels, a conservative estimate of electricity for a power tool (0,37kWh/DU) and diesel (3,81MJ/DU) for a crane has been made. The estimated distance to processing facility is 60km. After separation, the steel elements (panel faces, fasteners and steel flashings) are assumed to be 95% is being recycled, with the remaining 5% Landfilled (according to World Steel Association, 2020). The IPN foam end of life scenario assumes 65% of foam waste goes to waste to energy incineration and remaining 35% goes to landfill.
In Module D, the net benefit of recycling steel, waste treatment of packaging materials is included as avoided material production (from recycling) and electricity and heat production (from incineration).

ADDITIONAL INFORMATION

Kingspan steel-faced sandwich insulated panels with insulation core made from IPN foam are manufactured according to legally defined measures in the occupational health and safety regulations, which apply to the complete manufacturing process for sandwich panels. In collaboration with the external advisors, voluntary "health and safety" audits are carried out at regular intervals. The results of these inspections correspond to the official workplace guidelines.

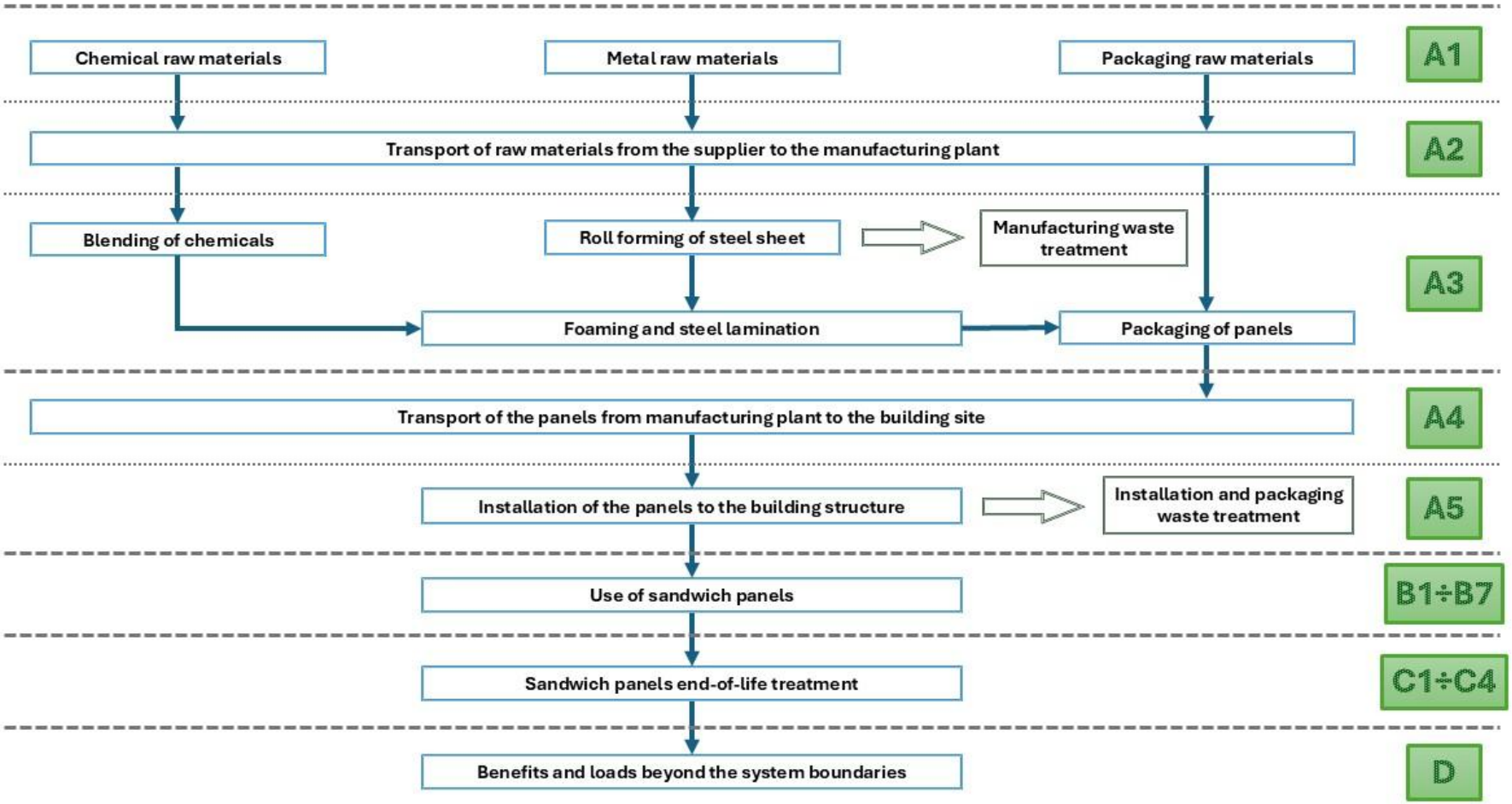
The panels are not harmful and do not emit any hazardous substances during their service life.

The Kingspan Kereskedelmi Kft. plant in Ujhartyan is certified to ISO 9001, ISO 14001, ISO 37301, ISO 45001 and ISO 50001 management standards.

During the analysed period of production, the content of recycled material, in key raw materials (steel and MW), based on mass balance method, was:

- For steel sheets – 18,33%
- For IPN insulation foam – 0%.

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.

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	Allocated by mass or volume
Packaging material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	-

This EPD is product and factory specific and does not contain average calculations.

LCA SOFTWARE AND BIBLIOGRAPHY

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

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	3,18E+01	1,71E+00	1,15E+00	3,46E+01	8,34E-01	4,28E+00	MND	MND	MND	MND	MND	MND	MND	4,52E-01	3,52E-01	7,04E+00	9,60E-03	-1,13E+01
GWP – fossil	kg CO_2e	3,17E+01	1,71E+00	1,57E+00	3,50E+01	8,34E-01	3,86E+00	MND	MND	MND	MND	MND	MND	MND	4,52E-01	3,52E-01	7,04E+00	9,59E-03	-1,13E+01
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-4,19E-01	-4,19E-01	0,00E+00	4,19E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,62E-03
GWP – LULUC	kg CO_2e	1,38E-02	6,71E-04	6,64E-04	1,51E-02	3,27E-04	1,69E-03	MND	MND	MND	MND	MND	MND	MND	3,72E-04	1,42E-04	3,35E-04	9,06E-06	-2,25E-03
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	1,92E-07	3,95E-07	9,22E-08	6,80E-07	1,93E-07	2,42E-07	MND	MND	MND	MND	MND	MND	MND	7,27E-08	8,10E-08	5,62E-08	3,88E-09	-4,47E-07
Acidification potential	mol H^+e	7,71E-02	6,98E-03	5,43E-03	8,96E-02	3,38E-03	1,81E-02	MND	MND	MND	MND	MND	MND	MND	4,01E-03	1,42E-03	8,39E-03	9,02E-05	-4,61E-02
EP-freshwater[2)]	kg Pe	1,48E-03	1,20E-05	8,25E-05	1,58E-03	5,85E-06	5,15E-05	MND	MND	MND	MND	MND	MND	MND	1,65E-05	2,52E-06	1,39E-05	1,01E-07	-5,46E-04
EP-marine	kg Ne	1,89E-02	2,09E-03	1,19E-03	2,22E-02	1,01E-03	6,31E-03	MND	MND	MND	MND	MND	MND	MND	1,51E-03	4,23E-04	3,80E-03	3,12E-05	-8,78E-03
EP-terrestrial	mol Ne	2,00E-01	2,31E-02	1,27E-02	2,36E-01	1,11E-02	6,87E-02	MND	MND	MND	MND	MND	MND	MND	1,67E-02	4,66E-03	3,74E-02	3,43E-04	-1,03E-01
POCP ("smog")[3)]	kg NMVOCe	5,98E-02	7,05E-03	4,23E-03	7,11E-02	3,41E-03	1,90E-02	MND	MND	MND	MND	MND	MND	MND	4,58E-03	1,43E-03	9,12E-03	9,99E-05	-5,52E-02
ADP-minerals & metals[4)]	kg Sbe	2,12E-04	6,06E-06	3,83E-06	2,22E-04	2,95E-06	7,04E-05	MND	MND	MND	MND	MND	MND	MND	1,52E-06	1,30E-06	2,74E-05	2,20E-08	-4,38E-06
ADP-fossil resources	MJ	5,25E+02	2,54E+01	2,71E+01	5,78E+02	1,24E+01	4,61E+01	MND	MND	MND	MND	MND	MND	MND	7,22E+00	5,21E+00	6,40E+00	2,63E-01	-1,07E+02
Water use[5)]	m^3e depr.	-1,35E+01	1,17E-01	5,33E-01	-1,29E+01	5,72E-02	-9,50E-02	MND	MND	MND	MND	MND	MND	MND	9,61E-02	2,45E-02	3,02E-01	8,34E-04	-2,09E+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, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	2,39E-07	1,48E-07	4,00E-08	4,27E-07	7,19E-08	2,88E-07	MND	MND	MND	MND	MND	MND	MND	8,78E-08	2,98E-08	5,18E-08	1,82E-09	-6,13E-07
Ionizing radiation[6)]	kBq U235e	3,54E-01	1,33E-01	3,90E-01	8,77E-01	6,48E-02	1,66E-01	MND	MND	MND	MND	MND	MND	MND	1,03E-01	2,74E-02	3,50E-02	1,19E-03	-1,18E-01
Ecotoxicity (freshwater)	CTUe	1,10E+02	2,10E+01	9,81E+00	1,40E+02	1,03E+01	1,56E+01	MND	MND	MND	MND	MND	MND	MND	4,59E+00	4,35E+00	3,04E+01	1,72E-01	-3,29E+02
Human toxicity, cancer	CTUh	3,97E-09	6,55E-10	3,53E-10	4,97E-09	3,18E-10	5,52E-10	MND	MND	MND	MND	MND	MND	MND	1,64E-10	1,37E-10	1,01E-09	4,29E-12	1,19E-07
Human tox. non-cancer	CTUh	2,99E-07	2,14E-08	1,02E-08	3,31E-07	1,04E-08	1,76E-08	MND	MND	MND	MND	MND	MND	MND	4,06E-09	4,39E-09	4,01E-08	1,12E-10	-2,00E-07
SQP[7)]	-	7,37E+00	1,78E+01	2,87E+00	2,80E+01	8,66E+00	3,28E+00	MND	MND	MND	MND	MND	MND	MND	1,10E+00	3,58E+00	5,99E+00	5,62E-01	-2,92E+01

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

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	2,02E+01	3,64E-01	2,89E+00	2,35E+01	1,77E-01	3,06E+00	MND	MND	MND	MND	MND	MND	MND	6,57E-01	7,68E-02	5,44E-01	2,28E-03	-4,05E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	3,84E+00	3,84E+00	0,00E+00	-3,67E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,62E-01	-8,51E-03	0,00E+00
Total use of renew. PER	MJ	2,02E+01	3,64E-01	6,74E+00	2,73E+01	1,77E-01	-6,12E-01	MND	MND	MND	MND	MND	MND	MND	6,57E-01	7,68E-02	3,83E-01	-6,22E-03	-4,05E+00
Non-re. PER as energy	MJ	4,26E+02	2,54E+01	2,01E+01	4,71E+02	1,24E+01	4,40E+01	MND	MND	MND	MND	MND	MND	MND	7,21E+00	5,21E+00	6,40E+00	2,63E-01	-1,07E+02
Non-re. PER as material	MJ	1,08E+02	0,00E+00	-8,49E-02	1,07E+02	0,00E+00	-4,40E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-6,70E+01	-3,61E+01	0,00E+00
Total use of non-re. PER	MJ	5,33E+02	2,54E+01	2,00E+01	5,79E+02	1,24E+01	3,96E+01	MND	MND	MND	MND	MND	MND	MND	7,21E+00	5,21E+00	-6,06E+01	-3,58E+01	-1,07E+02
Secondary materials	kg	2,60E-01	8,50E-03	2,68E-01	5,37E-01	4,15E-03	6,24E-02	MND	MND	MND	MND	MND	MND	MND	1,93E-03	1,80E-03	4,24E-03	5,53E-05	6,56E+00
Renew. secondary fuels	MJ	5,35E-05	9,37E-05	2,25E-03	2,40E-03	4,57E-05	7,37E-05	MND	MND	MND	MND	MND	MND	MND	7,85E-06	2,00E-05	2,06E-04	1,44E-06	2,88E-04
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	5,50E-03	5,50E-03	0,00E+00	1,10E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	3,15E+00	3,19E-03	1,44E-02	3,16E+00	1,56E-03	6,94E-02	MND	MND	MND	MND	MND	MND	MND	2,93E-03	6,66E-04	1,44E-02	2,88E-04	-3,43E-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	9,40E-02	2,85E-02	3,39E-02	1,56E-01	1,39E-02	6,33E-02	MND	MND	MND	MND	MND	MND	MND	1,67E-02	5,98E-03	1,80E-02	0,00E+00	2,69E-01
Non-hazardous waste	kg	3,91E+00	5,05E-01	3,30E+00	7,72E+00	2,47E-01	1,49E+00	MND	MND	MND	MND	MND	MND	MND	7,45E-01	1,06E-01	3,08E+00	1,82E+00	-2,35E+01
Radioactive waste	kg	1,51E-03	1,75E-04	1,02E-04	1,79E-03	8,52E-05	5,56E-04	MND	MND	MND	MND	MND	MND	MND	5,16E-05	3,58E-05	1,55E-05	0,00E+00	-1,11E-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	1,32E-02	0,00E+00	3,68E-01	3,81E-01	0,00E+00	1,95E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	8,94E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	1,02E-03	0,00E+00	1,68E-01	1,69E-01	0,00E+00	4,17E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	2,51E+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	3,54E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

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

THIRD-PARTY VERIFICATION STATEMENT

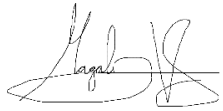
I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited
07.02.2025



VERIFIED ISO 14025

ANNEX I

SCALLING TABLES

Table No. 1											
Product Thickness [mm]		**40**	**50**	**60**	**80**	**100**	**120**	**150**	**160**	**170**	**200**
Product Weight [kg/m²]		9.89	10.32	10.51	11.66	12.84	12.84	14.32	13.47	14.81	15.9
Impact category		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
EN 15804+A2, PEF	GWP – total	0,807	0,821	0,853	0,950	1,00	1,060	1,180	1,144	1,249	1,345
	GWP – fossil	0,807	0,822	0,853	0,950	1,00	1,059	1,180	1,144	1,246	1,344
	GWP – biogenic	0,809	0,842	0,859	0,952	1,00	1,050	1,172	1,103	1,000	1,301
	GWP – LULUC	0,682	0,728	0,775	0,907	1,00	1,106	1,278	1,285	1,384	1,543
	Ozone depletion pot,	0,747	0,778	0,818	0,929	1,00	1,078	1,226	1,206	1,306	1,434
	Acidification potential	0,826	0,837	0,865	0,956	1,00	1,052	1,161	1,116	1,228	1,317
	EP-freshwater	0,424	0,520	0,615	0,816	1,00	1,190	1,475	1,563	1,665	1,949
	EP-marine	0,833	0,842	0,869	0,959	1,00	1,050	1,158	1,113	1,216	1,302
	EP-terrestrial	0,826	0,839	0,864	0,958	1,00	1,051	1,161	1,119	1,220	1,309
	POCP (“smog”)	0,802	0,817	0,850	0,948	1,00	1,060	1,184	1,149	1,250	1,353
	ADP-minerals & metals	0,946	0,932	0,941	1,000	1,00	1,009	1,072	0,991	1,090	1,122
	ADP-fossil resources	0,662	0,707	0,763	0,900	1,00	1,108	1,292	1,304	1,404	1,574
	Water use	0,252	0,382	0,507	0,757	1,00	1,247	1,611	1,760	1,859	2,230

Table No. 2											
Product Thickness [mm]		**40**	**50**	**60**	**80**	**100**	**120**	**150**	**160**	**170**	**200**
Product Weight [kg/m²]		9.89	10.32	10.51	11.66	12.84	12.84	14.32	13.47	14.81	15.9
Impact category		**A1-A5+ C1-C4+D**	**A1-A5+ C1-C4+D**	**A1-A5+ C1-C4+D**	**A1-A5+ C1-C4+D**	**A1-A5+ C1-C4+D**	**A1-A5+ C1-C4+D**	**A1-A5+ C1-C4+D**	**A1-A5+ C1-C4+D**	**A1-A5+ C1-C4+D**	**A1-A5+ C1-C4+D**
EN 15804+A2, PEF	GWP – total	0,761	0,787	0,826	0,933	1,000	1,07	1,213	1,199	1,294	1,415
	GWP – fossil	0,761	0,787	0,826	0,933	1,000	1,07	1,213	1,199	1,294	1,415
	GWP – biogenic	1,000	1,000	1,000	1,000	1,000	1,00	1,000	1,000	1,000	1,000
	GWP – LULUC	0,721	0,756	0,802	0,918	1,000	1,09	1,243	1,245	1,335	1,476
	Ozone depletion pot,	0,819	0,838	0,866	0,949	1,000	1,05	1,159	1,139	1,217	1,308
	Acidification potential	0,837	0,850	0,876	0,958	1,000	1,05	1,151	1,120	1,206	1,289
	EP-freshwater	0,442	0,535	0,627	0,823	1,000	1,18	1,461	1,547	1,644	1,922
	EP-marine	0,828	0,843	0,871	0,954	1,000	1,05	1,157	1,134	1,215	1,302
	EP-terrestrial	0,831	0,846	0,873	0,955	1,000	1,05	1,154	1,131	1,211	1,297
	POCP (“smog”)	0,817	0,835	0,864	0,950	1,000	1,06	1,165	1,145	1,226	1,319
	ADP-minerals & metals	0,960	0,948	0,954	1,000	1,000	1,01	1,055	0,990	1,071	1,094
	ADP-fossil resources	0,688	0,729	0,780	0,907	1,000	1,10	1,270	1,279	1,373	1,530
	Water use	0,227	0,362	0,491	0,748	1,000	1,25	1,630	1,786	1,886	2,270