ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Standard BOF Steel Roof Deck
Firth Steels Ltd

EPD HUB, HUB-4164
Published on 17.10.2025, last updated on 17.10.2030

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

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Firth Steels Ltd
Address	Calderbank, River St, Brighouse, HD6 1LU, Yorkshire, England
Contact details	Technical@firth-steels.co.uk
Website	https://www.firth-steels.co.uk/

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 EN 17662 Execution of steel structures and aluminium structures
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	
Scope of the EPD	Cradle to gate with modules C1-C4, D
PD author	Thomas O'Neil - Firth Steels Ltd
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Haiha Nguyen, as an authorized verifier acting for EPD Hub Limited

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

PRODUCT

Product name	Standard BOF Roof Deck
Additional labels	SR30+, SR35+, SR60+, SR100+
Product reference	DR51
Place(s) of raw material origin	Europe
Place of production	Firth Steels Ltd - Brighouse, Yorkshire, United Kingdom
Place(s) of installation and use	United Kingdom
Period for data	04:2023 to 04:2024
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	-

ENVIRONMENTAL DATA SUMMARY

Declared unit	1m^2 of Standard BF Steel Roof Deck (0.9mm gauge)
Declared unit mass	9.52 kg
GWP-fossil, A1-A3 (kgCO_2e)	2.58E+01
GWP-total, A1-A3 (kgCO_2e)	2.43E+01
Secondary material, inputs (%)	6.7
Secondary material, outputs (%)	86.6
Total energy use, A1-A3 (kWh)	76.3
Net freshwater use, A1-A3 (m^3)	0.05

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

At Firth Steels, sustainability isn't an afterthought, it's where we begin. From our steel profiles to our advanced building systems, each product is crafted with a commitment to reducing environmental impact and supporting a future, for good. Manufactured in Yorkshire, we blend innovative design with a commitment to environmental integrity, creating enduring spaces that positively impact our world.

PRODUCT DESCRIPTION

The Firth Steels/SMD Roof Deck profile range are available in a range of depths from 30 mm to 100 mm, offering design flexibility for various structural applications. These profiles can be used for short spans between purlins or longer spans onto hot-rolled steel beams, depending on project requirements.

SR profiles are commonly integrated into built-up roofing systems, including single-ply membranes, double-skin systems, standing seam assemblies, green roofs, and asphalt finishes.

As standard, the profiles are supplied with a 275 g/m² hot-dip galvanised coating, which is suitable for most internal environments.
Where enhanced durability or a specific visual finish is required, options such as interior liner profiles or polyester colour coatings can be specified.
meters, helping to reduce on-site labour and streamline construction workflows.

Further information can be found at: https://www.firth-steels.co.uk/

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	EU
Minerals	0	N/A
Fossil materials	0	N/A
Bio-based materials	0	N/A

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	0.41

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1m² of Standard BOF Steel Roof Deck (0.9mm gauge)
Mass per declared unit	9.52 kg
Functional unit	N/A
Reference service life	N/A

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	MND	MND	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = 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 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 utilised in the factory

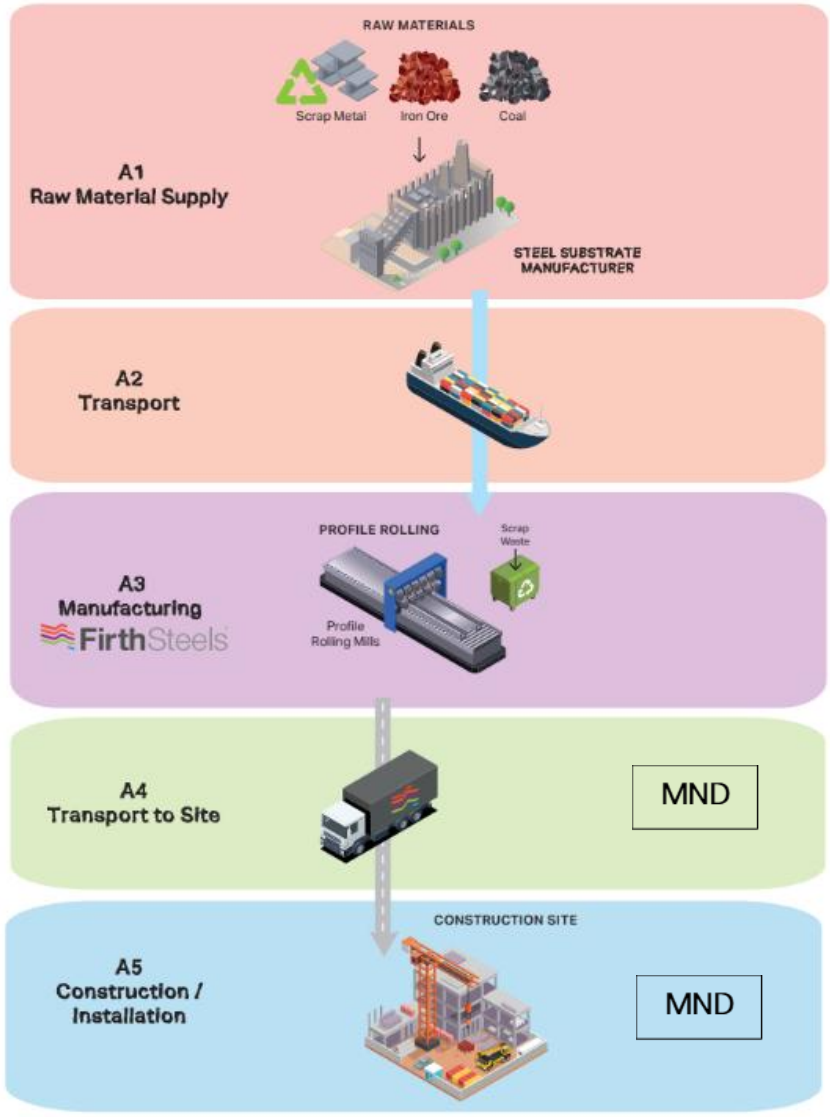
The steel used in the manufacture of the profiles is sourced from a supplier located outside the United Kingdom. Steel slabs are produced using a conventional blast furnace process. During production, raw materials are processed to form molten steel, which is then cast into slabs. These slabs are subsequently rolled into coils and galvanised to provide corrosion protection. The roll forming process used to manufacture the steel profiles consists of several critical steps designed to convert steel strips into functional, structurally sound profiled sheets. Initially, a coil of steel is fed into a roll forming machine comprising a series of roll stands, each equipped with rollers. These rollers progressively shape the steel strip into the required profile. As the strip advances through each stand, the material undergoes gradual forming to ensure dimensional accuracy, maintain structural integrity, and minimise distortion. Once the desired profile is fully achieved, the formed steel is cut to predetermined lengths based on project specifications.
During the manufacturing process, material losses and waste are primarily generated from steel offcuts. These offcuts are collected and fully recycled through a licensed recycling company, supporting the circular economy and reducing landfill impact.
For transport and delivery, the finished profiles are packaged using plastic banding and timber skids. These packaging materials are prepared and processed on-site upon delivery to ensure secure and efficient handling. The Use of minimal yet effective packaging supports both product protection and sustainability goals.

PRODUCT END OF LIFE (C1-C4, D)

For product removal, a conservative estimate of 1 kWh of electricity for power tools and 2 kWh of diesel for crane operation per m² has been applied. At the end of the product's service life, it is recommended that profiles be directed to a reclamation facility, where steel can be separated from any other components and appropriately recycled. In alignment with the World Steel Association (2020), 85% of the steel is assumed to be recycled, with the remaining 15% sent to landfill.

Packaging waste has been modelled in accordance with EN 15804+A2 using One Click LCA default EU scenarios. For wood packaging, treatment includes a mix of recycling, municipal incineration, and landfill, while plastic packaging is assumed to follow typical EU waste streams including incineration with energy recovery, landfill, and recycling. These assumptions are consistent with standard EU waste management practices and are supported by the datasets within One Click LCA. The impact of packaging has been balanced within the end-of-life stages (C1–C4, D) to give a fair overall comparison

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, %	N/A

This EPD is product and factory specific.

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 v3.10.1/3.11 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

ENVIRONMENTAL IMPACT DATA

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

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

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	2.53E+01	1.72E-01	-1.17E+00	2.43E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	1.01E+00	4.14E-01	1.14E+00	5.86E-01	-1.70E-02
GWP – fossil	kg CO_2e	2.53E+01	1.72E-01	3.38E-01	2.58E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	1.00E+00	4.14E-01	2.02E-01	1.11E-02	-7.14E-02
GWP – biogenic	kg CO_2e	1.19E-02	3.53E-05	-1.51E+00	-1.50E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	7.36E-05	8.93E-05	9.37E-01	5.75E-01	5.45E-02
GWP – LULUC	kg CO_2e	9.20E-03	8.16E-05	5.93E-04	9.87E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	7.39E-05	1.83E-04	2.47E-04	6.35E-06	-1.03E-04
Ozone depletion pot.	kg CFC_{-11}e	1.43E-11	2.52E-09	1.38E-07	1.41E-07	MND	MND	MND	MND	MND	MND	MND	MND	MND	1.10E-08	5.81E-09	2.58E-09	3.09E-10	-1.13E-09
Acidification potential	mol H^+e	6.18E-02	1.88E-03	1.54E-03	6.52E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	6.99E-03	1.38E-03	2.24E-03	7.70E-05	-4.26E-04
EP-freshwater[2)]	kg Pe	1.45E-05	1.11E-05	3.14E-05	5.70E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	2.22E-04	3.21E-05	1.20E-04	2.23E-06	-4.09E-05
EP-marine	kg Ne	1.59E-02	5.01E-04	4.76E-04	1.69E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	3.11E-03	4.47E-04	5.07E-04	8.81E-05	-6.54E-05
EP-terrestrial	mol Ne	1.73E-01	5.53E-03	5.14E-03	1.84E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	3.41E-02	4.86E-03	5.70E-03	3.20E-04	-6.49E-04
POCP ("smog")[3)]	kg NMVOCe	5.58E-02	1.71E-03	1.66E-03	5.92E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	1.01E-02	1.92E-03	1.69E-03	1.17E-04	-2.37E-04
ADP-minerals & metals[4)]	kg Sbe	2.98E-04	3.89E-07	2.28E-06	3.01E-04	MND	MND	MND	MND	MND	MND	MND	MND	MND	2.59E-07	1.36E-06	1.30E-05	1.86E-08	-1.41E-07
ADP-fossil resources	MJ	2.47E+02	2.38E+00	6.42E+00	2.56E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	1.48E+01	5.80E+00	2.57E+00	2.62E-01	-1.29E+00
Water use[5)]	m^3e depr.	1.17E+00	1.05E-02	6.02E-02	1.24E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	2.36E-02	2.69E-02	4.99E-02	8.39E-04	-2.22E-02

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.

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	1.50E+01	2.90E-02	3.30E+00	1.83E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	1.08E+00	7.98E-02	-3.32E+00	-2.93E+00	1.24E+00
Renew. PER as material	MJ	0.00E+00	0.00E+00	1.39E+01	1.39E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	-8.62E+00	-5.28E+00	3.75E-01
Total use of renew. PER	MJ	1.50E+01	2.90E-02	1.72E+01	3.22E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	1.08E+00	7.98E-02	-1.19E+01	-8.21E+00	1.61E+00
Non-re. PER as energy	MJ	2.48E+02	2.38E+00	6.24E+00	2.57E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	1.48E+01	5.80E+00	2.33E+00	1.84E-01	-1.29E+00
Non-re. PER as material	MJ	0.00E+00	0.00E+00	1.82E-01	1.82E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	-1.40E-01	-4.20E-02	2.63E-01
Total use of non-re. PER	MJ	2.48E+02	2.38E+00	6.42E+00	2.57E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	1.48E+01	5.80E+00	2.19E+00	1.42E-01	-1.03E+00
Secondary materials	kg	6.38E-01	1.05E-03	8.19E-04	6.39E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	4.43E-03	2.61E-03	3.11E-03	7.07E-05	3.21E-03
Renew. secondary fuels	MJ	0.00E+00	1.02E-05	1.02E-05	2.04E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	1.22E-05	3.32E-05	1.40E-04	1.43E-06	-1.17E-06
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	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	4.52E-02	3.04E-04	1.27E-03	4.67E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	6.23E-04	7.69E-04	1.36E-03	-4.20E-04	-8.42E-04

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	3.77E-06	3.81E-03	1.13E-02	1.51E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	2.61E-02	1.01E-02	1.74E-02	3.17E-04	-4.85E-03
Non-hazardous waste	kg	5.90E-01	6.65E-02	2.73E-01	9.30E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	1.43E-01	1.89E-01	7.35E-01	8.75E-01	-2.67E-01
Radioactive waste	kg	5.10E-03	4.46E-07	2.88E-05	5.13E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	6.73E-05	1.16E-06	5.45E-06	4.39E-08	-5.30E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	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	0.00E+00	0.00E+00	4.20E-01	4.20E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	8.24E+00	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	7.72E-01	0.00E+00	0.00E+00
Exported energy – Electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	3.25E-01	0.00E+00	0.00E+00
Exported energy – Heat	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	4.47E-01	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	2.53E+01	1.72E-01	3.38E-01	2.58E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	1.00E+00	4.14E-01	2.02E-01	1.11E-02	-7.15E-02

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

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity UK, medium voltage, residual mix, ecoinvent 3.10.1
The shares have been calculated based on statistics from AIB (2023) following the methodology of grexel (2020). The calculation area considered for the calculation of the residual mixes covers all members of EU28, Iceland, Norway, Serbia and Switzerland. The residual mix of a country is calculated based on the domestic residual mix. The domestic residual mix represents the sum of all domestic electricity production considering imports and export outside the calculation area and issued and expired attributes	
Electricity CO2e / kWh	0.079
Internal Transport data source and quality	Diesel, burned in building machine (Reference product: diesel, burned in building machine ecoinvent 3.10.1
This module is based on the data included in the report Oekoinventare von Energiesystemen 1996. The diesel consumption and the emissions are updated using the Swiss Offroad database and applied to year 2000	
Internal Transport CO2e / MJ	0.1

End of Life scenario documentation

PROCESSES	VALUES PER DECALRED UNIT
Collection process specified by type	9.52 Kg Collected
Recovery system specified by type	8.09Kg to recycling
Disposal specified by type	1.43Kg to Landfill
Assumptions for scenario development	Transportation of dismatnled product is assumed to be 250km to recycling and 50km to landfill

THIRD-PARTY 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.

HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited

16.10.2025

VERIFIED ISO 14025

ANNEX 1 - SCALING TABLE

System Product		SR30+ 0.7	SR35+ 0.7	SR60+ 0.7	SR30+ 0.9	SR100+ 0.7	SR35+ 0.9	SR60+ 0.9	SR100+ 0.9	SR35+ 1.2	SR60+ 1.2	SR100+ 1.2
Impact Category		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A4	A1-A5
Weight of System (Kg/m^2)		*6.66*	*7.4*	*7.83*	*8.57*	*9.24*	*9.52*	*10.08*	*11.91*	*12.72*	*13.46*	*15.9*
EN 15804+A2,PEF	GWP - Total	0.48	0.53	0.57	0.62	0.67	1	0.73	0.88	0.94	1.00	1.18
	GWP- Fossil	0.50	0.55	0.58	0.64	0.68	1	0.75	0.88	0.94	0.99	1.18
	GWP - Bio genic	1.00	1.00	1.00	1.00	10.00	1	1.00	1.00	1.00	1.00	0.99
	GWP - Luluc	0.71	0.78	0.82	0.99	0.96	1	1.04	1.22	1.30	1.37	1.61

REFRENCES

1. Wooden packaging recycling (source: EUROSTAT, https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519174/default/table?lang=en)

2. Wooden packaging incineration (source: EUROSTAT, https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519174/default/table?lang=en)

3.Exported electric energy for the wooden pallet. (averaged from "Debunking Efficient Recovery: The Performance of EU Incineration Facilities, 2023" https://zerowasteeurope.eu/wp-content/uploads/2023/01/Debunking-Efficient-Recovery-Full-Report-EN.docx.pdf).

4.Exported thermal energy for the wooden pallet. "Debunking Efficient Recovery: The Performance of EU Incineration Facilities, 2023" https://zerowasteeurope.eu/wp-content/uploads/2023/01/Debunking-Efficient-Recovery-Full-Report-EN.docx.pdf).

5. Plastic packaging recycling (source: EUROSTAT, https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519242/default/table?lang=en)

6. Plastic packaging incineration (source: EUROSTAT, https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519242/default/table?lang=en)

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8. Exported thermal energy for packaging film. "Debunking Efficient Recovery: The Performance of EU Incineration Facilities, 2023" https://zerowasteeurope.eu/wp-content/uploads/2023/01/Debunking-Efficient-Recovery-Full-Report-EN.docx.pdf).