ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

FDEB_H Raised Access Floor Panel with HPL Finish
Tate

EPD HUB, HUB-6457
Published on 25.05.2026, last updated on 25.05.2026, valid until 25.05.2031

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.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Tate
Address	Burma Drive, Hull, East Yorkshire, Marfleet, HU9 5SG, United Kingdom
Contact details	Fergal.Cassin@kingspan.com
Website	https://tateglobal.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
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Pat Hermon, Erin Lynas - LCD Consulting
EPD verification	Independent verification of this EPD and data, according to ISO 14025: o Internal verification þ External verification
EPD verifier	Yazan Badour 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	FDEB_H Raised Access Floor Panel with HPL Finish
Additional labels	
Product reference	FDEB_H with HPL Finish
Place(s) of raw material origin	Europe
Place of production	Hull, United Kingdom
Place(s) of installation and use	United Kingdom, Republic of Ireland and Rest of the World
Period for data	2024
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	-
A1-A3 Specific data (%)	29.6

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m2 of FDEB_H Raised Access Floor Panel with HPL Finish
Declared unit mass	42.44 kg
Mass of packaging	3.14 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	47.4
GWP-total, A1-A3 ($kgCO_2e$)	-8.94
Secondary material, inputs (%)	41
Total energy use, A1-A3 (kWh)	350
Net freshwater use, A1-A3 (m^3)	0.46

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Tate is the world's largest supplier of raised access flooring, with more than 50 years of experience in manufacturing, design, installation, and standard setting. This long-standing expertise has secured Tate its market-leading position. We are part of the €8.1 billion turnover Kingspan Group, a global leader in high-performance insulation, building fabric, and solar-integrated building envelopes—delivering high-efficiency, low-cost, and lower-carbon building solutions across a broad range of market sectors. As business needs evolve rapidly, workspaces must be able to adapt just as quickly.

Raised access floors have proven to be the most cost-effective way of creating flexible, future-ready space. They allow safe, convenient, and adaptable distribution of services beneath the solid raised floor platform. Whether the requirement is for a standard raised floor, an air-plenum floor, or factory-bonded finishes, Tate's product range is designed to meet every likely specification, including PSA MOB and the European Standard EN 12825.

Our range includes galvanised woodcore, static control, and natural finish systems. All deliver efficient installation, high performance, and easy accessibility to the service void. At Tate, we aim to set the pace and set the standard—demonstrated by our ISO 14001:2015 accreditation for Environmental Management Systems. We take sustainable timber sourcing seriously and recognise the positive impact that reducing deforestation has on global ecosystems. To reinforce this commitment, all our wood is FSC certified.

We are also ISO 9001:2015 accredited for both manufacturing and installation operations. Our highly automated factory in Hull is ISO 50001:2018 and ISO 14001:2015 accredited, capable of producing more than 200,000 floor panels per week. Every panel is designed and manufactured to the latest industry standards and supported by our industry-leading in-house product testing and technical support facilities.

PRODUCT DESCRIPTION

The FDEB_H panel is based on a 600mm-square module made of a high-density particle chipboard core in a galvanised steel outer. The galvanised-steel shell comprises a top sheet that is wrapped around and laminated to the core, then mechanically-stitched to the bottom steel sheet for greater strength and to provide full electrical continuity and static dispersion of the system where required. This unique wrap-around construction makes panel removal and replacement easy whilst also improving panel edge strength.

The FDEB_H is a lightweight loose-lay panel designed for low-occupancy office use without heavy equipment. It is engineered to fine dimensional tolerances for modular control and fully tested to the requirements of the European Standard for raised access floors EN 12825.

Further information can be found at:
https://tateglobal.com/

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	29	E.U.
Minerals	0	
Fossil materials	2	E.U.
Bio-based materials	69	E.U.

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	11.78
Biogenic carbon content in packaging, kg C	1.298

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m2 of FDEB_H Raised Access Floor Panel with HPL Finish
Mass per declared unit	42.44 kg
Functional unit	-
Reference service life	-

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	x	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.

FDEB_H panels are made at Tates' Hull factory in the UK. The process involves cutting and/or trimming of particleboard and galvanised steel sheet, encapsulation of the board in the steel sheet, and finishing. Manufacture is covered by both the site's ISO 9001:2015-certified quality management system and its ISO 14001-certified environmental management system.

Metal waste and chipboard waste generated during the manufacturing stage is segregated and recycled, either through the original supplier or through a third party.

Panels are transported to the construction site on wooden pallets. Polyester strapping is used to retain panels in place; typical use is approximately 0.002kg of strapping per kg of product. Cardboard boxes and wooden pallets can be reused or recycled from the construction site. Transport distances for A3 waste included as 50km to nearest facility.

The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

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.

The distance for this transport is taken as an average of 227.75 km road distance and 302 km sea distance for the measured average panel distributions to construction sites across the World.

The installation energy is minimal due to the manual labour involved in installing these panels. The installation scenario assumes drill fixing, sawing and electric pallet trucks.

Installation losses are estimated at 3%, which is a conservative scenario.

The following recommended EU scenarios were considered:

Resource	Scenario	Reference
Wood pallet	31% recycled 31% incinerated with Energy Recovery 38% landfill	Eurostat & PSR-0014 v2 (2023)
Plastics	32.5% recycled 42.5% incinerated with ER 25% landfill	EuroParl (2023)

PRODUCT USE AND MAINTENANCE (B1-B7)

Modules B1-B7 are not covered by the scope of the study. Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

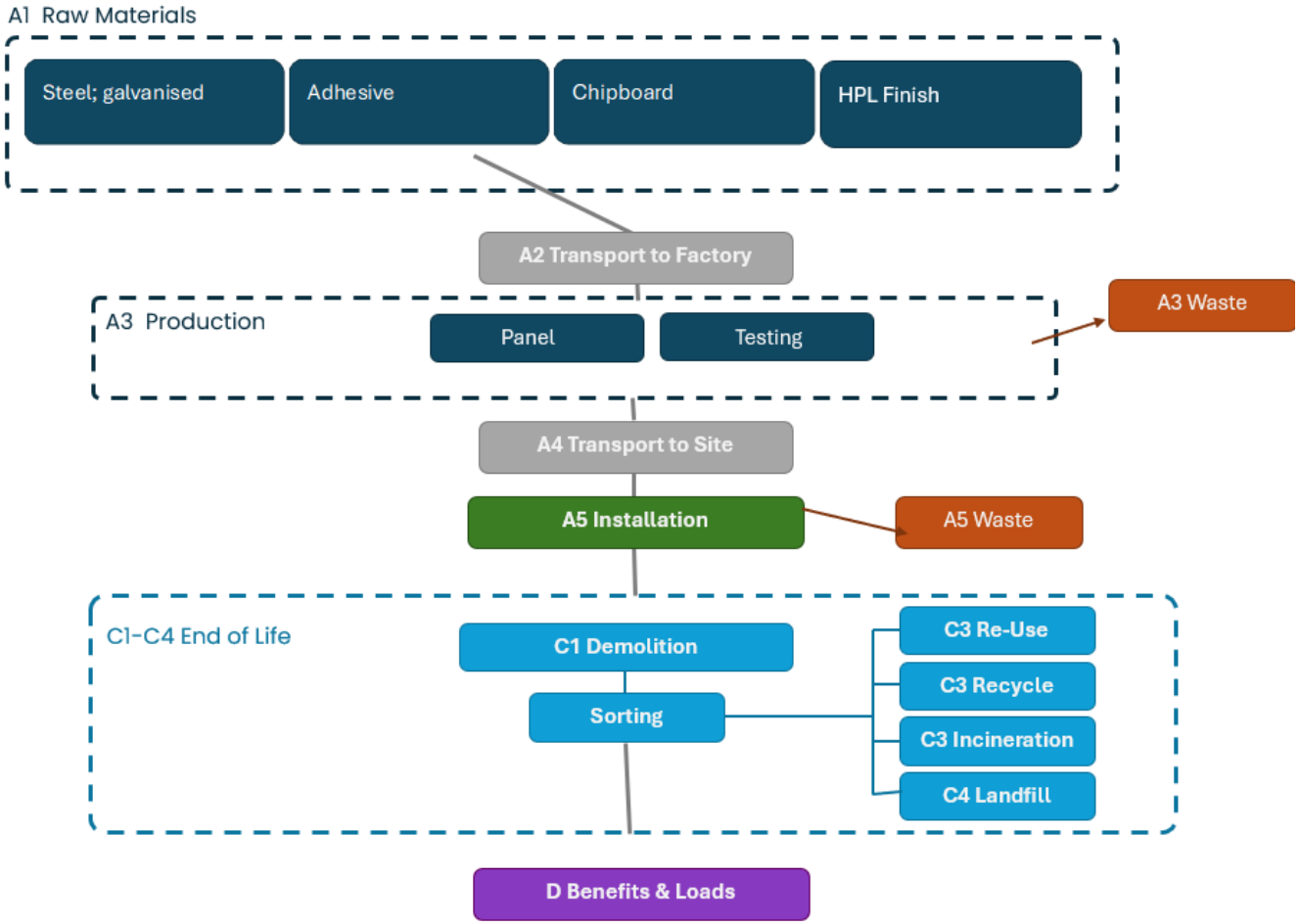
Energy consumption is considered in this section for the process of panel de-construction from the building. It is assumed that it takes 0.01 kWh per kg of deconstructed panels.

When removed at the end of its life, over 99% of the components of an access flooring system can be recycled. To achieve this encapsulating steel should be separated from chipboard; metal and chipboard can then be recycled or recovered as separate streams. In this EPD, a mix of disposal and recycling is applied as a conservative assumption concerning current practice.

Transportation distance is assumed as 50km to treatment and landfill and the transportation method is assumed to be a 16-32-ton EURO6 lorry (C2). Steel is recycled and particle board is incinerated in module C3. Loads of landfilled product are reported in module C4. The wood pallet is recycled and polypropylene straps are recycled and landfilled as per scenarios. This is taken as 99% incineration and 1% landfill.

The benefits and loads of recycling steel, incineration and recycling of packaging are included in Module D. Timber packaging is incinerated, with transfer of energy and avoided production of wood chips. Plastic packaging is also recycled and incinerated, with benefits and loads of avoided production 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.

Ancilliary materials unknown but considered well below 1% cut-off by environmental relevance.

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	Allocated by volume
Packaging material	No allocation
Ancillary materials	Not applicable
Manufacturing energy and waste	Allocated by 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.
Energy and water were allocated by volume of production, per panel, and then multiplied by 1/0.36 for allocation per m2 of product.
In place of a product specific EPD for Pfleider, a generic Ecoinvent particle board data set has been used to ensure EN15084+A2 compliance.

LCA SOFTWARE

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.4. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11/3.12 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11/3.12 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

BIBLIOGRAPHY:

A5 - Installation and waste:

- Installation losses of 3% is a conservative approach, the data of which was provided by our in house technical department. Installation resources is based on a typical scenario of raised access floor panels and the associated pedestals, which includes drilling fixing, impact fixing, screwing down using handheld tools, cutting and transport using an electric pallet truck.
- Installation losses are then accounted for via 2 scenarios. The steel from the panels is sorted for recycling. This percentage is based on the steels weight within the product of approximately 69%. The chipboard is then incinerated for energy recovery. Reference: Eurostat & PSR-0014 v2 (2023).

- A5 Waste: (This is also detailed in section A4-A5 in the EPD document)
  For A5 packaging waste, our scenarios are based on the following sources:
  Wood pallet scenario: 31% recycled, 31% with energy recovery, 38% landfill. Reference: Eurostat & PSR-0014 V2.
- Plastic packaging scenario: 32.5% recycled, 42.5% incinerated with Energy Recovery, 25% landfill. Reference: Europarl 2023.

End of life C1-C4

- Steel scenario: 85% of steel is recycled, with 15% to landfill. Reference: World Steel Association(2020 pg 19) Life cycle inventory (LCI) study.

- Chipboard scenario: 99% incineration with energy recovery, 1% landfill. Reference: RICS whole life carbon assessment Sept 23. (wood panel products figure is based on timber development uk technical paper)
- Energy reference for exported thermal/electricity from incineration: Reference: Oneclick LCA recommended scenario .
- Energy for deconstruction panel; 0.01 per kwh /kg: Reference Bozdağ, Ö & Seçer, M. 2007. (Oneclick LCA recommended)

Module D: Benefits and Loads:

- The wood packaging benefits/loads scenario is based on incineration. This is a Oneclick LCA recommended scenario, taking into account transfer of PERM, PENRM, biogenic carbon transfer 314.36 MJ / unit, benefit in avoided production of wood chips, and finally load of diesel used in grinding wood product into mulch.

- The plastic packaging benefits/loads scenario is based on recycling and incineration. This is a Oneclick LCA recommended scenario, taking into account transfer of PENRM, recycling benefit of avoided polyethylene production, load of recycling, incineration energy and heat produced from incineration.

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	-1,07E+01	4,39E+00	-2,66E+00	-8,94E+00	2,11E+00	7,17E+00	ND	ND	ND	ND	ND	ND	ND	1,38E+00	4,03E-01	9,87E+00	4,43E+01	-7,74E+00
GWP – fossil	kg CO_2e	4,15E+01	4,38E+00	1,53E+00	4,74E+01	2,11E+00	1,88E+00	ND	ND	ND	ND	ND	ND	ND	1,37E+00	4,03E-01	6,72E-01	5,34E-02	-7,75E+00
GWP – biogenic	kg CO_2e	-5,22E+01	5,96E-04	-4,19E+00	-5,63E+01	4,18E-04	5,28E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,68E-05	9,19E+00	4,42E+01	9,53E-03
GWP – LULUC	kg CO_2e	3,57E-02	2,23E-03	4,68E-03	4,26E-02	7,84E-04	1,41E-03	ND	ND	ND	ND	ND	ND	ND	4,27E-03	1,45E-04	4,12E-04	1,66E-05	-3,29E-03
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	1,45E-06	7,05E-08	4,66E-08	1,57E-06	4,12E-08	5,16E-08	ND	ND	ND	ND	ND	ND	ND	2,38E-08	8,01E-09	8,07E-09	7,44E-10	-2,05E-07
Acidification potential	mol H^+e	2,08E-01	7,66E-02	8,18E-03	2,93E-01	8,24E-03	9,89E-03	ND	ND	ND	ND	ND	ND	ND	7,00E-03	8,38E-04	7,34E-03	3,75E-04	-5,33E-02
EP-freshwater[2)]	kg Pe	1,33E-02	3,07E-04	4,33E-04	1,41E-02	1,37E-04	4,73E-04	ND	ND	ND	ND	ND	ND	ND	1,23E-03	2,71E-05	3,41E-04	1,47E-05	-4,03E-03
EP-marine	kg Ne	4,13E-02	1,89E-02	2,23E-03	6,24E-02	2,02E-03	2,81E-03	ND	ND	ND	ND	ND	ND	ND	1,21E-03	2,01E-04	3,03E-03	5,94E-04	-8,05E-03
EP-terrestrial	mol Ne	4,84E-01	2,09E-01	2,64E-02	7,20E-01	2,21E-02	2,54E-02	ND	ND	ND	ND	ND	ND	ND	1,06E-02	2,17E-03	3,01E-02	1,81E-03	-8,83E-02
POCP ("smog")[3)]	kg NMVOCe	1,63E-01	6,02E-02	1,06E-02	2,33E-01	9,92E-03	8,41E-03	ND	ND	ND	ND	ND	ND	ND	3,50E-03	1,39E-03	7,89E-03	5,10E-04	-3,10E-02
ADP-minerals & metals[4)]	kg Sbe	1,85E-04	8,89E-06	1,17E-05	2,06E-04	6,70E-06	7,56E-06	ND	ND	ND	ND	ND	ND	ND	3,07E-06	1,34E-06	1,76E-05	8,11E-08	-1,33E-05
ADP-fossil resources	MJ	5,68E+02	5,69E+01	3,05E+01	6,55E+02	2,94E+01	2,31E+01	ND	ND	ND	ND	ND	ND	ND	3,25E+01	5,66E+00	7,03E+00	6,10E-01	-1,10E+02
Water use[5)]	m^3e depr.	1,79E+01	2,47E-01	8,30E-01	1,90E+01	1,43E-01	6,64E-01	ND	ND	ND	ND	ND	ND	ND	8,41E-01	2,82E-02	9,74E-01	5,52E-02	-1,23E+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	3,60E-06	2,16E-07	1,52E-07	3,97E-06	1,49E-07	1,40E-07	ND	ND	ND	ND	ND	ND	ND	2,45E-08	2,97E-08	8,88E-08	5,57E-09	-2,82E-07
Ionizing radiation[6)]	kBq U235e	1,63E+00	5,47E-02	1,58E-01	1,84E+00	3,65E-02	6,69E-02	ND	ND	ND	ND	ND	ND	ND	9,08E-01	7,31E-03	3,12E-02	5,31E-04	-5,04E-01
Ecotoxicity (freshwater)	CTUe	3,04E+02	5,90E+00	8,47E+00	3,18E+02	3,81E+00	1,10E+01	ND	ND	ND	ND	ND	ND	ND	3,43E+00	7,53E-01	4,81E+00	7,70E-01	-6,97E+00
Human toxicity, cancer	CTUh	1,32E-07	8,71E-10	5,39E-09	1,38E-07	3,61E-10	4,27E-09	ND	ND	ND	ND	ND	ND	ND	2,85E-10	6,76E-11	1,02E-09	5,08E-11	-1,52E-08
Human tox. non-cancer	CTUh	2,49E-07	2,54E-08	1,81E-08	2,93E-07	1,80E-08	1,57E-08	ND	ND	ND	ND	ND	ND	ND	1,23E-08	3,58E-09	6,91E-08	3,60E-09	-7,59E-08
SQP[7)]	-	1,02E+03	1,98E+01	4,34E+02	1,48E+03	1,69E+01	4,70E+01	ND	ND	ND	ND	ND	ND	ND	5,53E+00	3,42E+00	7,24E+00	8,69E-01	-1,60E+02

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	6,21E+02	7,79E-01	3,88E+01	6,60E+02	4,98E-01	-2,98E+01	ND	ND	ND	ND	ND	ND	ND	7,59E+00	9,92E-02	-4,76E+02	-2,73E+01	9,15E+01
Renew. PER as material	MJ	4,26E+02	0,00E+00	3,73E+01	4,63E+02	0,00E+00	-4,63E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-7,51E+01	-3,42E+02	0,00E+00
Total use of renew. PER	MJ	1,05E+03	7,79E-01	7,62E+01	1,12E+03	4,98E-01	-7,60E+01	ND	ND	ND	ND	ND	ND	ND	7,59E+00	9,92E-02	-5,51E+02	-3,69E+02	9,15E+01
Non-re. PER as energy	MJ	4,89E+02	5,69E+01	2,13E+01	5,68E+02	2,94E+01	1,07E+01	ND	ND	ND	ND	ND	ND	ND	3,25E+01	5,66E+00	7,03E+00	-4,95E+00	-1,10E+02
Non-re. PER as material	MJ	6,53E+01	0,00E+00	4,86E+00	7,01E+01	0,00E+00	-6,66E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-1,14E+01	-5,20E+01	0,00E+00
Total use of non-re. PER	MJ	5,55E+02	5,69E+01	2,62E+01	6,38E+02	2,94E+01	4,05E+00	ND	ND	ND	ND	ND	ND	ND	3,25E+01	5,66E+00	-4,40E+00	-5,70E+01	-1,10E+02
Secondary materials	kg	1,74E+01	2,93E-02	1,78E-01	1,76E+01	1,37E-02	5,31E-01	ND	ND	ND	ND	ND	ND	ND	3,49E-03	2,63E-03	1,29E-02	6,27E-04	-3,82E-01
Renew. secondary fuels	MJ	3,09E+01	1,83E-04	1,56E+00	3,25E+01	1,65E-04	9,75E-01	ND	ND	ND	ND	ND	ND	ND	1,43E-05	3,33E-05	2,01E-04	3,89E-06	-3,93E+00
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	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	4,31E-01	6,42E-03	1,97E-02	4,57E-01	3,89E-03	1,04E-02	ND	ND	ND	ND	ND	ND	ND	2,70E-02	7,72E-04	7,32E-03	-9,91E-04	-6,76E-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	6,50E+00	1,03E-01	1,00E-01	6,70E+00	4,26E-02	2,23E-01	ND	ND	ND	ND	ND	ND	ND	7,41E-02	8,23E-03	2,03E-01	1,33E-02	-6,64E-01
Non-hazardous waste	kg	8,52E+01	1,85E+00	4,41E+00	9,14E+01	8,81E-01	1,10E+01	ND	ND	ND	ND	ND	ND	ND	6,03E+00	1,74E-01	2,96E+01	3,82E+00	-2,08E+01
Radioactive waste	kg	6,00E-04	1,35E-05	4,12E-05	6,55E-04	9,07E-06	2,26E-05	ND	ND	ND	ND	ND	ND	ND	2,33E-04	1,82E-06	7,97E-06	1,30E-07	-1,27E-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	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	0,00E+00	0,00E+00	1,21E+00	1,21E+00	0,00E+00	3,62E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,04E+01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,15E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,81E+01	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,21E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,07E+02	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,86E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	8,85E+01	0,00E+00	0,00E+00
Exported energy –	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,23E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,89E+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	4,15E+01	4,38E+00	1,54E+00	4,74E+01	2,11E+00	1,88E+00	ND	ND	ND	ND	ND	ND	ND	1,38E+00	4,03E-01	6,73E-01	5,34E-02	-7,75E+00

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

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

1. Electricity production, photovoltaic, 3kWp facade installation, single-Si, panel, mounted, World, Ecoinvent, 0.13 kgCO2e/kWh
2. Electricity production, photovoltaic, 3kWp facade installation, single-Si, panel, mounted, World, Ecoinvent, 0.13 kgCO2e/kWh
3. Heat production, natural gas, at industrial furnace >100kW, Albania, Ecoinvent, 0.0773 kgCO2e/MJ
4. Heat production, natural gas, at industrial furnace >100kW, Albania, Ecoinvent, 0.0773 kgCO2e/MJ
5. Electricity production, wind, 1-3MW turbine, offshore, Ireland, Ecoinvent, 0.0168 kgCO2e/kWh
6. Hydro power, World, One Click LCA, 0.0040 kgCO2e/kWh
7. Biogas, World, One Click LCA, 0.17 kgCO2e/kWh
8. Heat production, wood chips from industry, at furnace 1000kW, World, Ecoinvent, 0.0181 kgCO2e/MJ
9. Heat production, wood chips from industry, at furnace 1000kW, World, Ecoinvent, 0.0181 kgCO2e/MJ
10. Market for liquefied petroleum gas, Albania, Ecoinvent, 1.09 kgCO2e/kg
11. Market for liquefied petroleum gas, Albania, Ecoinvent, 1.09 kgCO2e/kg

Transport scenario documentation - A4 (Transport resources)

Scenario parameter	Value
Capacity utilization (including empty return) %	70
Bulk density of transported products	1.98E+03
Volume capacity utilization factor	1

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	market group for electricity, low voltage, Ecoinvent, 0.0115 kWh
Water use (m^3)	-
Ancillary materials: type and mass (kg)	-
Waste materials: type and mass (kg)	Timber pallet; 3.056 kg; plastic packaging 0.0849 kg; steel 0.3681 kg; chipboard; 0.8313 kg
Waste materials: output routes	Timber pallet: 0.959 kg recycling, 1.145 kg landfill, 0.959 kg incineration with energy recovery Plastic packaging; 0.0849 kg recycling; 0.0849 kg landfill, 0.0849 kg incineration with energy recovery Steel from product: 0.3681 kg recycling Chipboard from product: 0.8313 kg; incineration with energy recovery
Direct emissions (kg)	-

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	42.44 kg collected separately
Collection process: Mixed waste (kg)	-
Recovery: re-use (kg)	0
Recovery: recycling (kg)	10.4
Recovery: energy recovery (kg)	28.1
Disposal (kg)	2.12
Scenario assumptions e.g. transportation (mode, km) & other	50km to nearest facility

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

Yazan Badour as an authorized verifier for EPD Hub Limited 25.05.2026