

Environmental Product Declaration

v1.0

In accordance with ISO 14025 and EN 15804:2012+A2:2019 for:

Hyperion[®] Aluminium Profiles

From:

EnviroBuild Materials Ltd. (EnviroBuild)



Programme

The International EPD[®] System,
www.environdec.com

Publication date

2023-03-20

Programme operator

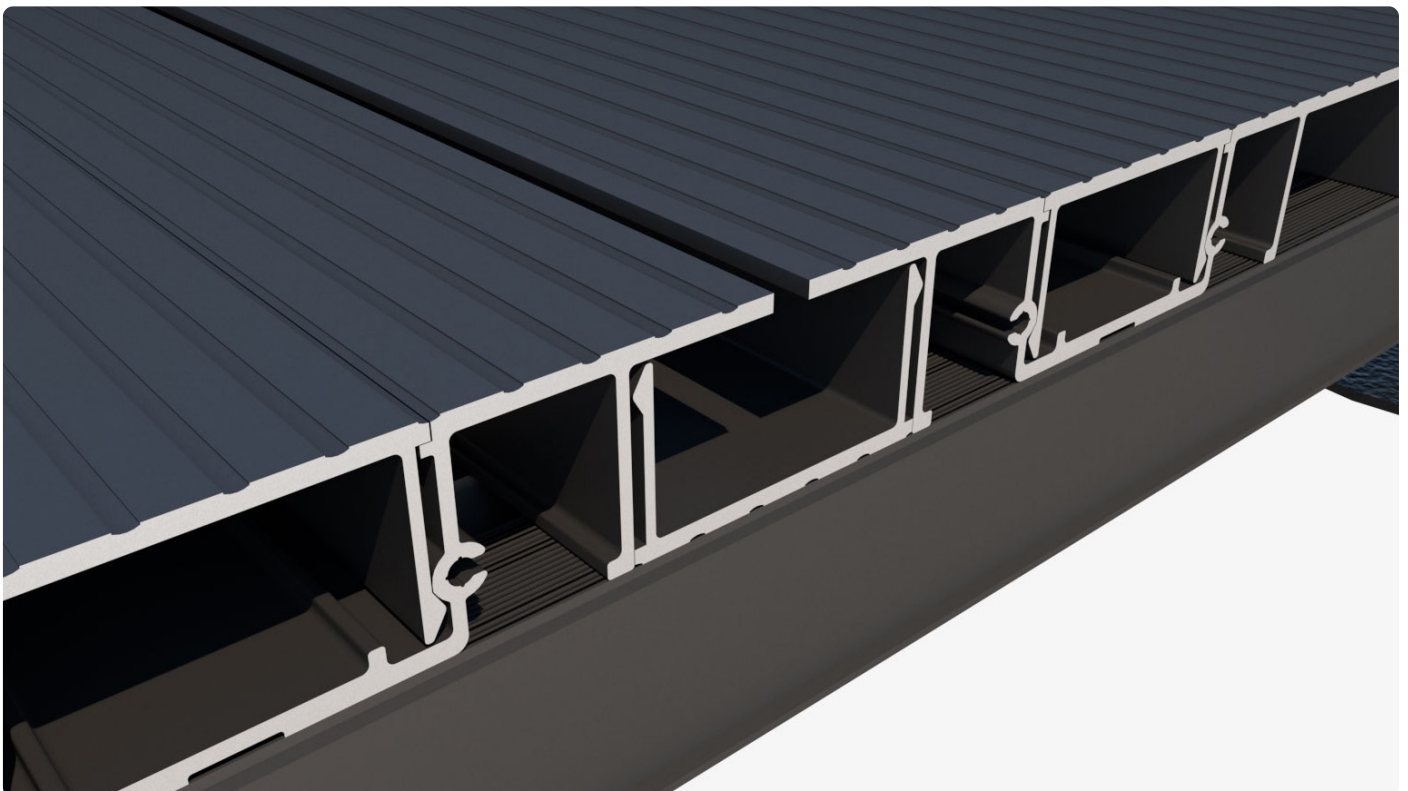
EPD International AB

Valid until

2028-03-16

EPD registration number

S-P-05645



Programme Information

Programme

The International EPD® System

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CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product category rules (PCR): Construction Products 2019:14 version 1.1

PCR review was conducted by:

The Technical Committee of the International EPD® System.
See www.environdec.com/TC for a list of members.
Review chair: Claudia A Pena, University of Concepcion, Chile.
The review panel may be contacted via the Secretariat
www.environdec.com/contact-us.

Independent third-party verification of the declaration and data, according to ISO 14025:2006:

External Internal

Covering:

EPD process certification EPD verification

Third party verifier:

Chris Foster
EuGeos Limited

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

Product Information

Company

Owner of the LCA

EnviroBuild Materials Ltd.

Contact

Hayden Cotgrove

Description of the organisation

Agents involved in the sale of timber and building materials.

Name and location of the product site(s)

Head Office

EnviroBuild
30 Great Guildford Street
London
United Kingdom
SE1 0HS

Warehouse

Warwickshire
United Kingdom

Production Site

Guangdong Province
China

envirobuild.com

info@envirobuild.com

Certifications

Product-related or management system-related certifications

- ISO9001:2008 Quality Management Systems
- ISO14001:2004 Environmental Management Systems

Programme Information

Core Product Category Rules (PCR)

CEN standard EN 15804

Product category rules (PCR)

Construction Products 2019:14 version 1.1

UN CPC Code

41532 Bars, rods and profiles, of aluminium

Product

Product Name

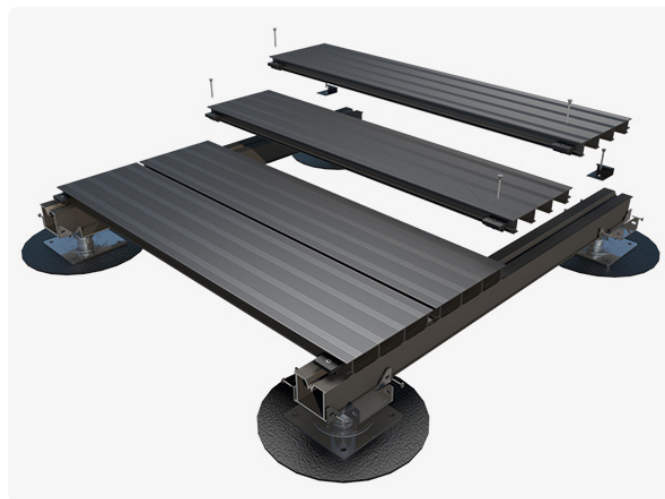
Hyperion Aluminium

Product description: 145 Pro Grip Decking

Designed to meet the needs of a wide variety of both commercial and residential spaces, this Class A fire-rated system optionally uses adjustable steel pedestals, aluminium joists and protective rubber membranes to provide security, strength & adaptability

where it is needed most. 145 Pro-Grip boards are highly slip resistant and easily installed with a simple hidden clip system.

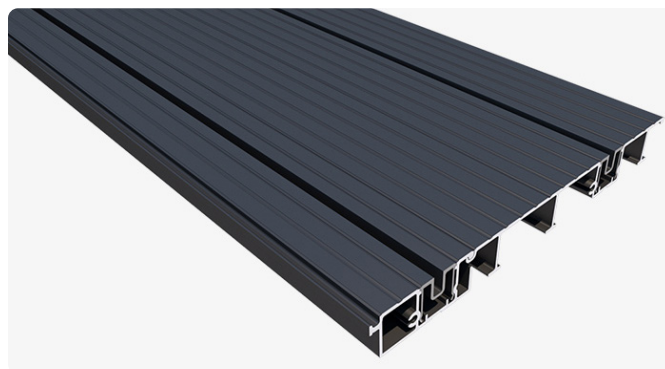
Engineered with security and simplicity in mind. This A-Class fire rated decking system makes creating beautiful decking spaces an efficient and time saving option. Single boards can be removed easily when craning a balcony or where damage may occur.



Product description: 150 Aqua-Channel Decking

150 Aqua-Channel boards create a continuous surface, with patented interlocking attachments and drainage channels which are designed to mitigate the capillary effect. Optional bespoke steel slopes, or a system using joist brackets and shims of varying sizes can be used to create a slope. Threshold and side drainage components can be used to collect water. 150 Aqua-Channel also has the ability to use screws suitable for thick steel beams.

Designed to meet the needs of a wide variety of both commercial and residential spaces this Class A fire-rated system can use adjustable steel pedestals, aluminium joists and protective rubber membranes to provide security, strength & adaptability where it is needed most. 150 Aqua-Channel boards create a continuous surface, with patented interlocking attachments and drainage channels which are designed to mitigate the capillary effect.

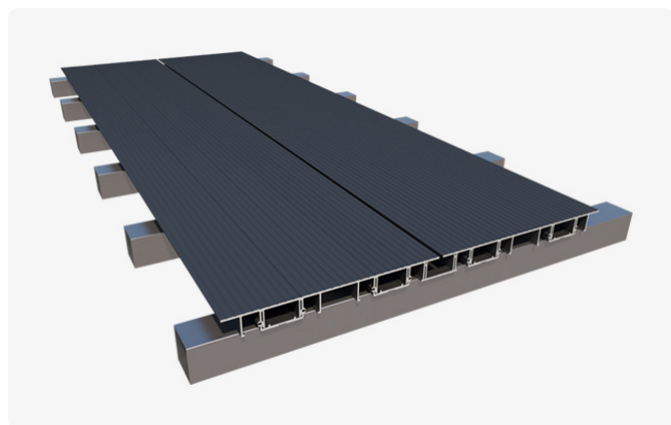


Product Information

Product description: Strong Span Decking

Strong-Span is designed to meet balcony retrofitting requirements, with two channels for bolting larger fixings onto steel beams. Strong-Span installation is completely clipless and works by using screws along its channel, which are simply hidden using inserts. Optionally, the inserts can be flipped to provide a 6 mm gap for excess water runoff.

Designed to meet the needs of a wide variety of both commercial and residential spaces, this Class A fire-rated system can use adjustable steel pedestals, aluminium joists and protective rubber membranes to provide security, strength & adaptability where it is needed most. Strong-Span installation is completely clipless and works by using screws along its channel, which are simply hidden using inserts. Optionally, the inserts can be flipped to provide a 6 mm gap for excess water runoff.



Product description: Aluminium Joists

Enhance the beauty and functionality of your space with innovative and environmentally friendly decking and cladding accessories.



Note: This is an average EPD covering all products listed here and in the product dimensions list on Page 5.

Manufacturing Information

All products included in the study are manufactured at the same factory from the same material. The manufacturing process consists of preparing the raw materials into ingot form and extruding the material into the profiles in Table 1. Whilst there are likely small differences in the manufacturing process for the different product outputs, the data was collected for the factory including product output by weight. Therefore, the products included have already been allocated by physical attributes. It is not expected that the difference in environmental impact per kg between products is above 10% anyway, so these differences have not been explored.

Product Information

Product Dimensions

Product Code	Name & Description	Weight (kg/m ²)	Weight (kg/m)
D-A-G-3.6, D-A-MG-3.6, D-A-LG-3.6, D-A-MB-3.6, D-A-DB-3.6, D-A-B-3.6, D-A-MF-3.6	145 Pro Grip Decking Board	8.27	1.24
DA-A-G-3.6, DA-A-MG-3.6, DA-A-LG-3.6, DA-A-MB-3.6, DA-A-DB-3.6, DA-A-B-3.6	145 Pro Grip Edge Support	-	0.193
D-A2-7016, D-A2-8019	150 Aqua Channel Decking Board	9.20	1.38
DA-A2-EP-7016, DA-A2-EP-8019	150 Aqua Channel Start/End Profile	-	0.694
DA-A2-DT-7016, DA-A2-DT-8019	150 Aqua Channel Side Drainage Trim	-	1.42
DA-A2-FI-7016, DA-A2-FI-8019	150 Aqua Channel Flush Insert	-	0.163
DA-A2-GI-7016, DA-A2-GI-8019	150 Aqua Channel Gap Insert	-	0.225
DA-A2-DCK-8019, DA-A2-DCK-7016	150 Aqua Channel Threshold Drain	-	0.583
DA-A3-7016, DA-A3-8019	Strong Span Decking Board	11.3	3.40
DA-A3-DI-7016, DA-A3-DI-8019	Strong Span Insert	-	0.550
DA-J-A-20	20x50 mm Joist	-	0.625
DA-J-A-40	40x50 mm Joist	-	0.797
DA-J-A-80	80x50 mm Joist	-	1.14

Product Characteristics: 145 Pro Grip Decking

Characteristic	Reference	Unit
Material		Aluminium 6063-T6, Interpon PE powder
Finish		Anti-slip Qualicoat 1 Textured Powder Coat
Weight		8.27 kg/m ²
Colours		8014 Sepia Brown, 8019 Grey Brown, 7037 Dusty Grey, 7016 Anthracite Grey (bespoke RAL colours available)
Reaction to Fire	EN 13501	A2 s1 d0, A2 _{fl} s1
Slip Resistance, PTV	EN 16165	Dry: 68 Wet: 46
Slip Resistance, Surface Roughness Rz	EN 16165	25 µm
Area Moment of Inertia		2.58E-08 m ⁴

UN CPC code: 41532 Bars, rods and profiles, of aluminium

Other codes for product classification: UK Commodity Code 7604 2990 90, Base metals and articles of base metal — Aluminium and articles thereof — Aluminium bars, rods and profiles — Of aluminium alloys — Other — Profiles — Other

Product Information

LCA Information

Functional unit

1 kg of Hyperion® Aluminium, installed for 30 years*

Reference service life

30 years

Time representativeness

2019-2020

Geographical scope

UK and China

Database(s) and LCA software used

Database: EcolInvent 3.6

LCA Software: OpenLCA 1.11.0

Impact Assessment Method: As specified in EN 15804+A2, using the characterisation factors published by the European Commission's Joint Research Centre and implemented in EuGeos' IA15804 database.

Description of system boundaries

(c) Cradle to grave and module D (A + B + C + D)

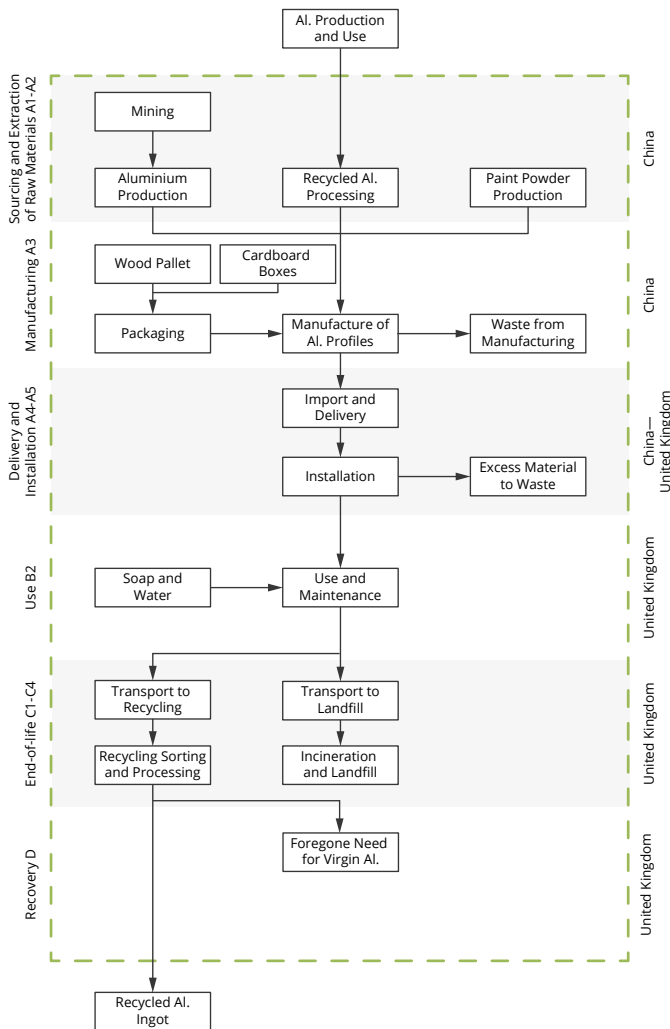
LCA practitioner

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305-308 Metal Box Factory
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London
United Kingdom
SE1 0HS

* Hyperion Aluminium is expected to last 30 years according to the warranty provided by EnviroBuild envirobuild.com/commercial/aluminium-decking/warranty

System diagram



Product Information

Assumptions

Quantity	Unit	Description	Module	Justification
100	km	Distance from warehouse to construction site	A4	Distance from warehouse to construction site is assumed to be a typical distance of 100 km.
0	kWh	Energy of warehouse	A5	Products are not expected to stay in the warehouse for a significant amount of time, so the energy use of their storage has not been considered.
0.03	kWh	Electricity used per kg of decking	A5	Electricity to cut tiles down to size around the perimeter of the floor
30	Years	Reference service life	B2	EnviroBuild expectations. Aluminium as a material will last longer, but on average customers are predicted to keep their flooring for around 10 years.
2	Years	Frequency of maintenance	B2	EnviroBuild recommendation to maintain flooring quality and lifespan.
24	m ² /5L	Soap and water usage per kg of decking per clean	B2	Mopping
1	%	Proportion of soap in decking cleaner	B2	Based on recommendations for popular decking cleaner.
0.6	L	Paint required per sqm of decking every 10 years	B2	Based on surface area of decking, and expected life of paint on surface
100	km	Distance from construction site to landfill site	C2	Typical distance
95	%	Recycled	C4	Typical recycling rates in the UK for aluminium construction products, according to the Aluminium Federation. https://www.alfed.org.uk/files/Fact%20sheets/5-aluminium-recycling.pdf

Common Scenarios

Transport to building site	Quantity (per functional unit)
Fuel type and consumption of vehicle or vehicle type used for transport	Freight container ship, heavy fuel oil, 2.51E-03 kg per t*km Freight lorry, diesel, 1.62E-02 kg per t*km
Distance	Freight container ship, 22,000 km Freight lorry, 370 km
Capacity utilisation	35% for lorry freight of finished product, 65% for sea freight of finished product
Bulk density of transport goods	413 kg/m ³

Product Information

Installation in the building	Quantity (per functional unit)
Ancillary materials for installation	2 steel screws, considered an average for the decking
Water use	None considered
Other resource use	None considered
Quantitative description of energy type and consumption during the installation process	Market mix of UK electricity, 3.89E-04 kWh per m ²
Waste materials on building site before waste processing, generated by product's installation	5% waste aluminium, considered to be 100% inert waste as scraps are likely to be too small in size and quantity to be recycled in any meaningful quantity. Packaging waste is also considered here.
Output materials as a result of waste processing at the building site	None considered
Direct emissions to ambient air, soil, and water	None considered

Maintenance	Quantity (per functional unit)
Maintenance process	Use soap and water, in a ratio of 1:99, for a quantity of 0.026 L per m ² per maintenance. Reapply paint at 2 L per m ² .
Maintenance cycle	Once every 2 years (cleaning), once every 10 years (painting)
Ancillary materials for maintenance	None considered
Waste material from maintenance	Wastewater 0.026 L per m ² per maintenance
Net fresh water consumption during maintenance	0.026 L per m ² per maintenance
Energy input during maintenance	None considered

RSL Information	Quantity (per functional unit)
Reference Service Life	30 years
Design application parameters	Installed according EnviroBuild installation guides
An assumed quality of work, when installed in accordance with the manufacturer's instructions	5% waste, no need for replacement of parts
Indoor environment	Average UK humidity and temperature for outdoor conditions, without extreme variation.
Usage conditions	Typical residential environment.
Maintenance	Clean every two years with soap and water (see maintenance) Repaint every ten years (see maintenance)

Product Information

End-of-life	Quantity (per functional unit)
Collection process	Waste collection by lorry freight, 100 km distance
Recovery system	Sorting and processing of recycled material expected to use 14 MJ per kg of recycled material.*
Disposal specified by type	0.05 kg for final deposition. 100% inert waste
Assumptions for scenario development	95% of material is recycled, with the rest going to landfill.**

* <https://www.lowtechmagazine.com/what-is-the-embodied-energy-of-materials.html#:~:text=How%20much%20energy%20does%20it%20take%20%28on%20average%29,%25%20recycled%20aluminum%29%3A%2011.35-17MJ%20%283%2C%20150%20to%204%2C%20750%20watt-hours%29>

** <https://www.alfed.org.uk/files/Fact%20sheets/5-aluminium-recycling.pdf>

Cut-off Rules and Data Quality

Life cycle inventory data is according to EN 15804. 100% of all inflows (mass and energy) have been accounted for, for every declared module.

Whilst this EPD is based on a range of products, as those products are all manufactured from identical materials and from almost identical production processes, it can be asserted that GWP-GHG indicator does not differ between the products (per functional unit) by more than 10%.

Allocation

Co-product allocation is based on the physical mass of each product from the manufacturing process, as per EN 15804. Whilst each product from the factory may have a slightly different value, as the analysis has been completed on the basis of the functional unit of 1 kg of the material overall, the differences in value of the products were not considered as the material content and manufacturing processes were identical or close enough to. As every product from the manufacturing process was considered for the process, the co-product allocation did not need to be considered.

Energy for Manufacturing

Data for the energy used in module A3 (manufacturing) is from the EcoInvent 3.6 database for average power production in China, the total climate change impact of which is **1.06 kg CO2 eq./kWh**.

Product Information

Modules Declared, Geographical Scope, Share of Specific Data (in GWP-GHG Indicator) and Data Variation

	Product Stage		Construction Process Stage			Use Stage							End of Life Stage				Resource Recovery Stage
	Raw Material	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules Declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	CN	CN	CN	CN, GB	GB	GB	GB	GB	GB	GB	GB	GB	GB	GB	GB	GB	GB
Specific data used	>90%					-	-	-	-	-	-	-	-	-	-	-	-
Variation: Products	<10%					-	-	-	-	-	-	-	-	-	-	-	-
Variation: Sites	Not relevant					-	-	-	-	-	-	-	-	-	-	-	-

Content Information for Aluminium

Product Component	Weight, kg	Post-consumer material weight, %	Renewable material weight, %
Aluminium	0.942	15.0	0
Paint Powder	0.0579	0	0
Total	1.00	14.1	0

Environmental Information

Potential Environmental Impact: Mandatory Indicators According to EN 15804

Results per functional unit

Indicator	Unit	A1	A2	A3	Tot. A1-A3	A4	A5	B2	B1 & B3-B7	C1	C2	C3	C4	D
GWP Fossil	kg CO ₂ eq.	2.07 E+01	8.16 E-03	1.71 E+00	2.24 E+01	1.94 E-01	2.46 E-01	7.93 E-01	0.00 E+00	1.40 E-02	8.97 E-03	8.53 E-03	7.90 E-04	-6.42 E+00
GWP Biogenic	kg CO ₂ eq.	-1.60 E-01	-1.59 E-06	-5.91 E-01	-7.51 E-01	-6.52 E-05	4.10 E-01	-3.45 E-03	0.00 E+00	-3.74 E-06	-1.59 E-06	-1.51 E-06	3.42 E-01	-7.76 E-03
GWP LULUC	kg CO ₂ eq.	1.98 E-03	4.52 E-06	6.00 E-02	6.20 E-02	1.30 E-04	3.16 E-05	2.18 E-03	0.00 E+00	1.83 E-05	4.98 E-06	4.73 E-06	2.24 E-07	-1.36 E-01
GWP Total	kg CO ₂ eq.	2.05 E+01	8.16 E-03	1.18 E+00	2.17 E+01	1.94 E-01	6.55 E-01	7.92 E-01	0.00 E+00	1.41 E-02	8.98 E-03	8.53 E-03	3.42 E-01	-6.56 E+00
ODP	kg CFC 11 eq.	5.79 E-07	1.90 E-09	7.54 E-08	6.56 E-07	3.95 E-08	4.25 E-09	1.03 E-07	0.00 E+00	1.42 E-09	2.10 E-09	2.00 E-09	2.16 E-10	-5.15 E-07
AP	mol H ⁺ eq.	1.31 E-01	7.76 E-05	1.34 E-02	1.44 E-01	5.94 E-03	2.20 E-04	4.40 E-03	0.00 E+00	5.30 E-05	8.58 E-05	8.15 E-05	1.57 E-05	-5.27 E-02
EP Freshwater	kg P eq.	4.60 E-04	1.26 E-07	4.00 E-04	8.60 E-04	1.20 E-06	1.23 E-06	3.31 E-05	0.00 E+00	4.72 E-07	1.36 E-07	1.30 E-07	1.60 E-08	-3.20 E-04
EP Freshwater	kg PO ₄ eq.	1.41 E-03	3.85 E-07	1.23 E-03	2.64 E-03	3.68 E-06	3.77 E-06	1.01 E-04	0.00 E+00	1.45 E-06	4.18 E-07	3.97 E-07	4.89 E-08	-9.81 E-04
EP Marine	kg N eq.	2.15 E-02	3.13 E-05	1.67 E-02	3.82 E-02	1.48 E-03	2.10 E-04	6.10 E-04	0.00 E+00	9.82 E-06	3.46 E-05	3.29 E-05	6.78 E-06	-5.94 E-03
EP Terrestrial	mol N eq.	2.37 E-01	3.40 E-04	4.22 E-02	2.79 E-01	1.65 E-02	7.70 E-04	6.30 E-03	0.00 E+00	1.20 E-04	3.80 E-04	3.60 E-04	7.89 E-05	-6.59 E-02
POCP	kg NMVOC eq.	6.35 E-02	9.52 E-05	6.34 E-03	6.99 E-02	4.27 E-03	2.60 E-04	2.38 E-03	0.00 E+00	2.91 E-05	1.10 E-04	9.99 E-05	2.16 E-05	-1.91 E-02
ADP Minerals & Metals*	kg Sb eq.	5.17 E-05	1.93 E-07	1.56 E-05	6.75 E-05	1.70 E-06	5.87 E-07	2.54 E-05	0.00 E+00	1.03 E-07	2.13 E-07	2.03 E-07	6.56 E-09	-2.82 E-05
ADP Fossil*	MJ	2.47 E+02	1.34 E-01	2.63 E+01	2.73 E+02	2.51 E+00	5.21 E-01	1.31 E+01	0.00 E+00	2.42 E-01	1.48 E-01	1.40 E-01	1.80 E-02	-7.93 E+01
WDP*	m ³	9.22 E+00	1.64 E-02	2.91 E+01	3.83 E+01	2.79 E-01	1.43 E-01	8.31 E+00	0.00 E+00	2.10 E-02	1.66 E-02	1.58 E-02	3.99 E-02	-9.61 E+00

Acronyms

GWP Fossil = Global Warming Potential, fossil fuels; **GWP Biogenic** = Global Warming Potential, biogenic; **GWP LULUC** = Global Warming Potential, land use and land use change; **ODP** = Depletion potential of the stratospheric ozone layer; **AP** = Acidification potential, Accumulated Exceedance; **EP Freshwater** = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; **EP Marine** = Eutrophication potential, fraction of nutrients reaching marine end compartment; **EP Terrestrial** = Eutrophication potential, Accumulated Exceedance; **POCP** = Formation potential of tropospheric ozone; **ADP Minerals & Metals** = Abiotic depletion potential for non-fossil resources; **ADP Fossil** = Abiotic depletion for fossil resources potential; **WDP** = Water (user) deprivation potential, deprivation-weighted water consumption

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Potential Environmental Impact: Additional Mandatory and Voluntary Indicators

Results per functional unit

Indicator	Unit	A1	A2	A3	Tot. A1-A3	A4	A5	B2	B1, B3-B7	C1	C2	C3	C4	D
GWP-GHG*	kg CO ₂ eq.	2.07 E+01	8.16 E-03	1.78 E+00	2.24 E+01	1.94 E-01	4.64 E-01	7.96 E-01	0.00 E+00	1.41 E-02	8.98 E-03	8.53 E-03	8.00 E-04	-6.59 E+00

Use of Resources

Results per functional unit

Indicator	Unit	A1	A2	A3	Tot. A1-A3	A4	A5	B2	B1, B3-B7	C1	C2	C3	C4	D
PERE	MJ	8.14 E+00	2.07 E-03	7.77 E+00	1.59 E+01	2.01 E-02	7.80 E-02	5.78 E-01	0.00 E+00	6.38 E-02	2.31 E-03	2.19 E-03	4.10 E-04	-2.84 E+01
PERM	MJ	0.00 E+00	0.00 E+00	4.86 E+00	4.86 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	8.14 E+00	2.07 E-03	1.26 E+01	2.08 E+01	2.01 E-02	7.80 E-02	5.78 E-01	0.00 E+00	6.38 E-02	2.31 E-03	2.19 E-03	4.10 E-04	-2.84 E+01
PENRE	MJ	2.19 E+02	1.37 E-01	2.78 E+01	2.47 E+02	2.53 E+00	6.84 E-01	6.91 E+00	0.00 E+00	3.85 E-01	1.51 E-01	1.43 E-01	1.85 E-02	-8.04 E+01
PENRM	MJ.	2.89 E+01	0.00 E+00	0.00 E+00	2.89 E+01	1.00 E-03	0.00 E+00	6.73 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	2.48 E+02	1.37 E-01	2.78 E+01	2.76 E+02	2.53 E+00	6.84 E-01	1.36 E+01	0.00 E+00	3.85 E-01	1.51 E-01	1.43 E-01	1.85 E-02	-8.04 E+01
SM	kg	1.72 E-01	4.65 E-05	5.33 E-02	2.25 E-01	1.90 E-04	4.60 E-03	4.79 E-03	0.00 E+00	2.69 E-05	5.14 E-05	4.88 E-05	3.66 E-03	-1.36 E-02
RSF	MJ	2.09 E-02	5.02 E-05	2.64 E-02	4.73 E-02	3.80 E-04	4.40 E-04	1.01 E-02	0.00 E+00	1.30 E-04	5.87 E-05	5.58 E-05	9.16 E-06	-2.10 E-02
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	4.77 E-02	2.22 E-05	8.08 E-01	8.55 E-01	1.60 E-04	2.40 E-04	7.54 E-03	0.00 E+00	6.65 E-05	2.40 E-05	2.28 E-05	4.06 E-05	-1.88 E-01

Acronyms
PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

* The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste Production

Results per functional unit

Indicator	Unit	A1	A2	A3	Tot. A1-A3	A4	A5	B2	B1, B3-B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	3.23 E+00	1.70 E-04	7.96 E-02	3.31 E+00	2.71 E-03	7.94 E-03	9.17 E-02	0.00 E+00	7.70 E-04	1.80 E-04	1.70 E-04	1.20 E-04	-1.81 E+00
Non-hazardous waste disposed	kg	1.83 E+01	2.18 E-02	2.27 E+00	2.06 E+01	7.70 E-02	5.80 E-01	1.25 E+00	0.00 E+00	1.67 E-02	2.40 E-02	2.28 E-02	1.30 E-01	-1.40 E+01
Radioactive waste disposed	kg	2.00 E-04	8.63 E-07	4.06 E-05	2.41 E-04	1.77 E-05	3.98 E-06	3.33 E-05	0.00 E+00	2.68 E-06	9.56 E-07	9.08 E-07	9.23 E-08	-9.69 E-05

Output Flows

Results per functional unit

Indicator	Unit	A1	A2	A3	Tot. A1-A3	A4	A5	B2	B1, B3-B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Material for recycling	kg	5.21 E-03	2.77 E-05	6.00 E-04	5.84 E-03	1.00 E-03	2.72 E-05	1.20 E-04	0.00 E+00	1.05 E-05	3.05 E-05	2.90 E-05	3.54 E-07	-3.81 E-03
Materials for energy recovery	kg	2.00 E-04	4.91 E-07	2.60 E-04	4.60 E-04	3.70 E-06	4.29 E-06	9.88 E-05	0.00 E+00	1.32 E-06	5.75 E-07	5.46 E-07	8.97 E-08	-2.10 E-04
Exported energy, electricity	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, thermal	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00

Information on Biogenic Carbon Content

Results per functional unit

Biogenic carbon content	Unit	Quantity
Biogenic carbon content in product	kg C	0.00
Biogenic carbon content in packaging	kg C	0.267

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Results Interpretation

Most of the environmental impact of EnviroBuild Hyperion products lies in the raw material supply (A1). With a few exceptions depending on the impact category, other stages tend to have negligible impact by comparison, especially taking into account that they vary so widely depending on the product application and use case anyway. This is because of the energy requirements to extract aluminium from bauxite is extremely high. The impact of this stage would be reduced somewhat if the recycled content of the aluminium was higher (it is currently the market rate in the country of manufacture, China, at 15%), or if the energy consumption was sourced renewably.

In the expected country of use, the UK, recycling rates for aluminium are extremely high, as much as 95% according to the Aluminium Federation. As such, the environmental 'benefit' from module D is extremely high, as the Hyperion aluminium that is recycled substitutes the need for virgin aluminium. Recycled aluminium sees no loss in quality versus its virgin counterpart either.

Instructions For Proper Use and Maintenance

To help maximise the lifespan of EnviroBuild Hyperion Aluminium products, the deck should be washed with soap and water at least every 2 years. The joists require no such maintenance.

End-of-Life

The procedure for disposal of Hyperion Composite products is to arrange to take the boards to a local recycling facility. Parts that are too small to be recycled will likely be sent to landfill, whereas the rest will be processed and turned back into aluminium ingots.

Product Comparisons

Comparisons to other products, especially from LCAs not conducted by EnviroBuild as well, are discouraged due to differences in product scenarios and the data used. Between different flooring products there will be differences in the weight per square metre, which must also be kept in mind when comparing products.

Renewable Energy Use In Manufacturing

Following these results that indicate around 90.2% of the climate change total of the products come from module A1 (manufacturing), EnviroBuild announced that customers could 'Green' their aluminium starting in January 2022, whereby electricity usage for the extraction of the virgin aluminium would be sourced from renewable sources such as wind. This way, the

climate change total of the energy for manufacturing fell 96% from 1.06 kg CO₂ / kWh to 0.0371 kg CO₂ / kWh.

This is done through China's Green Energy Certificate scheme. This system allows companies to purchase renewable energy (either as solar energy or wind energy) voluntarily, and thus claim the environmental benefits of its production. More about the system can be read here:

www.there100.org/sites/re100/files/2020-10/Chinese%20GEC%20Paper_RE100_2020%20FINAL.pdf

More about EnviroBuild's 'Green' scheme can be read here:

<https://a.storyblok.com/f/162000/x/befa5965cd/non-combustible-fire-rated-systems-brochure-v2-1-uk-web.pdf>

Other Environmental Activity

We are on an environmental mission; looking to supply products that offer functional and environmental benefits over traditional construction materials. We look to supply solutions that reduce material usage, have high level of recycled content, use renewable energy in their manufacturing process, have a long working life and can be recycled again themselves. Wherever possible we incorporate environmentally friendly solutions into our supply chain, to give our products a lower carbon footprint to traditional alternatives. To go a step further, we donate 10% of our profits to sustainable causes to help become a carbon negative business.

The Rainforest Trust is a non-profit charity that helps to preserve Earth's remaining rainforests through community engagement and local partnerships in vulnerable areas around the world. Rainforests are the pinnacle of life's variety and complexity, and are the most diverse places on our planet, however, an average of 200,000 acres are destroyed every day. This has detrimental consequences that are felt around the world, negatively affecting atmospheric balance, human health and organism survival, amongst others. The Rainforest Trust focuses their efforts around three main protected area types; land acquisition, land designation and community-managed areas. You can find out more about their crucial work in our blog post. Since starting donations in 2016, we have donated towards a wide variety of Rainforest Trust projects with 100% of all donations going directly to these sustainable causes. The mission of the Rainforest Trust is incredibly important; protecting vast areas of rainforest, which consequently protects us, alongside every living organism. We are proud to support its cause and share its values.

For more information, visit www.envirobuild.com/pages/sustainability-what-we-give.

References

- General Programme Instructions of the International EPD® System. Version 4.0
- PCR 2019:14. Construction Products. Version 1.1
- EN 15804:2012 + A2:2019 Sustainability of Construction Works. Environmental Product Declarations. Core Rules for the Product Category of Construction Products.
- EN 13501 Fire classification of construction products and building elements - Classification using data from reaction to fire tests.
- EN 16165 Natural stone test methods. Determination of the slip resistance by means of the pendulum tester

