Statement of Verification

BREG EN EPD No: 000813 Issue: 01

This is to verify that the Environmental Product Declaration provided by:

RAAFT

are in accordance with the requirements of:

EN 15804:2012+A2:2019

and

BRE Global Scheme Document SD207

This declaration is for:
1kg of Metal pedestal with the estimated service life of 15 years

Company Address

RAAFT
1 Old Street, London,
EC1V 9HL

Signed for BRE Global Limited	Hayley Thomson Operator	
30 June 2026 Date of this Issue	30 June 2026 Date of First Issue	29 June 2031 Expiry Date

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Environmental Product Declaration

EPD Number: 000813

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE Global Product Category Rules (PCR) for Type III EPD of Construction Products to EN 15804+A2. PN514 3.1
Commissioner of LCA study	**LCA consultant/Tool**
RAAFT 1 Old Street, London, EC1V 9HL	**Eight Versa** 2nd Floor, 28 Marshalsea Rd, London SE1 1HF LCA tool: SimaPro 9.3.0.3
Declared Unit	**Applicability/Coverage**
1kg of Metal pedestal with the estimated service life of 15 years	Product Average.
EPD Type	**Background database**
Cradle to Grave	Ecoinvent v3.7.1

Demonstration of Verification
CEN standard EN 15804 serves as the core PCR [a]
Independent verification of the declaration and data according to EN ISO 14025:2010 ☐Internal ☒ External
(Where appropriate [b]) Third party verifier: Bala Subramanian
a: Product category rules b: Optional for business-to-business communication; mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)

Comparability
Environmental product declarations from different programmes may not be comparable if not compliant with EN 15804:2012+A2:2019. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See Clause 5.3 of EN 15804:2012+A2:2019 for further guidance

Information modules covered

Product			Construction		Use stage							End-of-life					Benefits and loads beyond the system boundary
					Related to the building fabric					Related to the building							
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4		D
Raw materials supply	Transport	Manufacturing	Transport to site	Construction – Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal		Reuse, Recovery and/or Recycling potential
☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑		☑

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

Metal pedestal sold by RAAFT is manufactured by RAAFT's manufacturing partner based in India.

Construction Product:

Product Description

A height adjustable metal pedestal range designed to support RAAFT Aluminium Joists. They are engineered to create safe and reliable external terrace support structure systems that are fast and easy to install. The Metal Adjustable Pedestals are manufactured from zinc-coated steel which is a non-combustible material. Available in a range of 11 adjustable height variations (30 mm and 50 mm variations and options). Adjustable to suit height build-up requirements. The base plate creates a stable platform and spreads the load evenly across the surface. The product is manufactured in India from steel. Also, all 11 variants share the same production process and composition. Therefore, the analysis has been conducted for 1 kg of metal pedestal, allowing the end user to determine the environmental impacts of the specific product used in the construction installation.

Technical Information

The metal pedestals made from steel come in 11 variations and the technical details have been detailed below.

SKU	Height Range Min (mm)	Height Range Max (mm)	Weight per ped (kg)	Weight Capacity (kN)
341010	27	36	0.36	12
341011	31	41	0.39	12
341012	41	51	0.4	12
341013	51	71	0.44	12
341014	61	90	0.45	12
341015	91	141	0.51	12
341016	111	186	0.59	12
341017	186	261	0.68	12
341018	251	316	0.83	12

SKU	Height Range Min (mm)	Height Range Max (mm)	Weight per ped (kg)	Weight Capacity (kN)
341019	301	376	0.85	12
341020	351	426	0.92	12

Main Product Contents

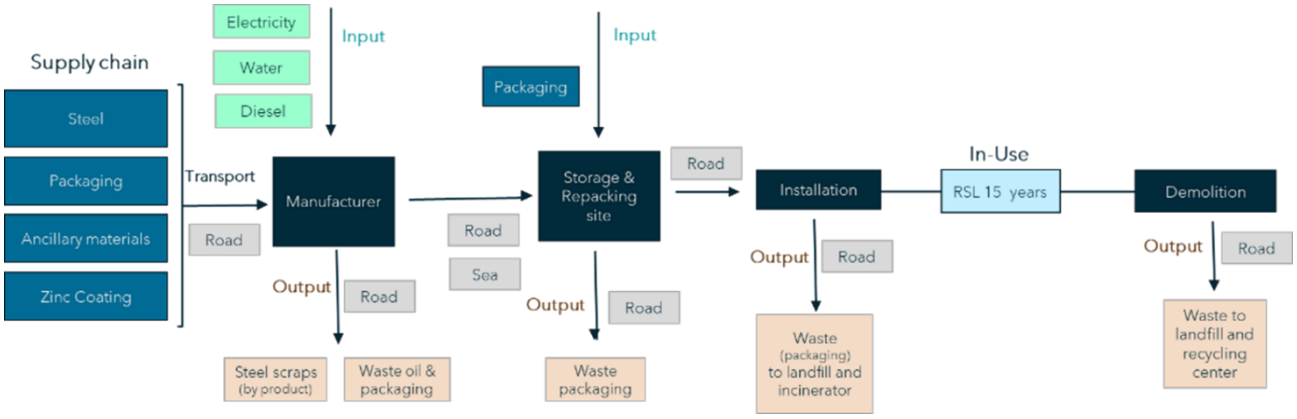
The metal pedestals are manufactured in India from powder coated steel.

Material/Chemical Input	%
Steel (including both recycled and virgin content)	100%
Recycled content	25%

Manufacturing Process

The metal pedestal is manufactured a facility located in India. This is a manufacturer and exporter of builder's hardware materials, sheet metal and construction hardware equipment. The steel is purchased from Indian steel makers which then undergoes processing to manufacture the pedestals. The powder coating, packaging materials and ancillary materials are sourced locally in India. The metal pedestals are transported from India to RAAFT's storage site in the UK. The product undergoes additional repackaging based on orders. The pallet and PE wrap supplied are disposed at RAAFT's storage site, and they are repackaged into new pallets and wrap.
Production site outputs consist mainly of waste oil (approximately 50 litres) and packaging waste (approximately 20 tonnes), both sent to local waste facilities, with wastewater assumed equivalent to input. During repacking at the RAAFT storage site, pallets and wrap are replaced while PE bags and boxes are retained. Waste treatment has been modelled using secondary data: timber pallets as 55% recycling/45% energy recovery (35%/65% landfill/incineration for Module D consistency), plastic via municipal incineration, and corrugated board via default Ecoinvent landfill and incineration scenarios. No waste was generated during installation.

Process flow diagram



Construction Installation

The metal pedestals are free-standing installation onto a firm level surface. The top bracket clamps to the joist. This is installed with zero or no other external machinery and is mostly done manually. In the exceptional case that it includes any machinery, the use is expected to be limited and infrequent. Therefore, this has been excluded from the assessment.

Use Information

The reference service life of the product considered in this EPD is 15 years. The product is entirely made of powder coated steel, a material resistant to water and most oils, greases and chemical products. When installed into the terrace systems, the product does not release substances into the ground and is not subject to mass loss. The emissions associated with the use of the product can be reasonably assumed to be zero or negligible. The product is statically installed, it is not subject to wear or other deterioration phenomena that require maintenance interventions during its life span. The correct installation of the product, in accordance with the specifications provided by RAAFT is a necessary condition to avoid undue maintenance / repairs.

End of Life

The product is made with a single material (powder coated steel) and has potential to be recycled further. It can be readily recycled without the need for complex disassembly or additional processing.

This EPD includes a conservative scenario aligned with the secondary data BRE PCR for steel products in construction. This dataset models the disposal mix for 1 kg of aluminium in United Kingdom as 95% sent for recycling and 5% to the landfill.

Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1kg of Metal pedestal with the estimated service life of 15 years

System boundary

The life cycle phases of a construction product can be classified into stages based on the processes as detailed in the EN 15804: 2012+A2:2019. This LCA study analyses the life cycle of 1 kilogram of Metal Pedestal from Cradle-to-Grave. Therefore, the system boundaries include:

- Production Stage - A1 – A3: A1 covers the supply of raw materials, primarily low-alloyed steel (with zinc coating applied), modelled using industry averages of 13% recycled content and 87% virgin material. A2 includes transportation of raw materials (steel), ancillary materials (lubricating oil), packaging materials (PE wrap, corrugated boxes, and pallets), and diesel fuel to the manufacturer's facility, as well as transport of packaging materials to the RAAFT storage site and finished products to the UK. A3 encompasses the manufacturing process at the manufacturer's facility (including zinc coating application and assembly), with mass allocation applied (83.7% to metal pedestals, 16.3% to scrap steel sold to dealers), and repackaging activities at the RAAFT storage site where products are manually repacked to order using new pallets and PE wrap.
- Construction Process Stage – A4, A5
- Use Stage – B1 -B7
- End of Life Stage – C1 – C4
- Benefits and loads beyond the system - D

PRODUCTION STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE BOUNDARIES OF THE SYSTEM
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly / Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Demolition	Transport	Waste processing	Disposal	Reuse- Recovery- Recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

All modules from cradle to grave have been considered for this assessment.

Data sources, quality and allocation

The results shown in this EPD are based on primary data for the fundamental aspects of the manufacturing process, such as: the product composition, the energy consumption, the water consumption, the disposal of waste and the consumption of ancillary materials. Primary data have also been used for types and quantities of materials used for product packaging, the distances between raw material suppliers and production site, and manufacturing facility to installation site based on averages as provided by the manufacturer.

Secondary data has been used for all processes not covered by primary data. The secondary data comes from the Ecoinvent database v3.7.1 and available in the SimaPro 9.3.0.3. Secondary data have been assessed to determine technological, geographical and time representativeness against the method specified in EN 15804:2012+A2:2019 - Annex E - Table E.1. The datasets have been ranked as ‘very good’,

‘good’, and ‘fair’. Primary data, sourced from RAAFT's manufacturing and storage facilities and covering a 12-month reference period (January to December 2022), reflects current, stable manufacturing conditions and is supplemented by consistent secondary data from the Ecoinvent v3.7.1 database, giving an overall time representativeness rating of Very Good. Material and process origins align with the UK-based geographic scope of the datasets used, resulting in a Good geographical representativeness rating in accordance with EN 15941. Primary data also reflects established, commercially mature technologies for steel fabrication, zinc coating, assembly and packaging at the manufacturing facility, with Ecoinvent v3.7.1 used as an appropriate proxy for upstream and downstream processes where primary data was unavailable, giving an overall technological representativeness rating of Good.

The end-of-life system boundary of the product system is set where the system outputs (e.g., materials, products, or construction elements) have reached the end of waste state.

Regarding virgin raw materials (e.g., packaging materials), both the impacts associated with the materials themselves and those associated with their production processes were considered. Whereas for the raw materials of recycled origin, only the impacts associated with their transformation from waste to product have been considered.

Recyclable outputs are considered inputs for the next lifecycle. Potential benefits and loads of reusable products, recyclable materials and useful energy carriers have been declared in module D. This includes benefits from the substitution of virgin materials as well as the energy recovery from packaging incineration.

The impacts of the production site at the manufacturing facility were allocated among the products being studied on a mass allocation basis using the allocation based on the cost of the products in the manufacturing site over the entire study period. The reference period for data collection was January 2022 - December 2022.

The electricity consumption was modelled using the secondary data “Electricity, medium voltage {IN-Northern grid} | market for electricity, medium voltage | Cut-off, S”, which reflects the consumption mix in the Northern region and has a GWP of 0.88 $kgCO_2e/kWh$. Where process-specific datasets were not available, proxy datasets from Ecoinvent v3.7.1 were used.

Cut-off criteria

Production-related emissions have been included in the assessment. Some minor exclusions have been made due to lack of data or irrelevance, all of which have been quantified through screening calculations confirming their impact is less than 5% and therefore not material. At the Tier 1 manufacturer supplier, emissions not directly linked to production, such as domestic hot water, office heating, and general building lighting, have been excluded, along with transport of the coating material given its negligible weight. Packaging waste data were not available from the facility; a screening calculation was carried out assuming packaging waste is comparable to the RAAFT storage site in the UK, as both use pallets and plastic wrap. As the impact is less than 5%, this waste activity has been excluded. At the RAAFT storage facility, the site functions solely as a distribution and repackaging facility where products are stored under ambient conditions with minimal lighting; a worst-case screening calculation was carried out assuming equal energy consumption to the manufacturing facility, and as the impact remained below 5%, this stage has been excluded from the analysis.

LCA Results

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts									
			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO_2 eq	kg CO_2 eq	kg CO_2 eq	kg CO_2 eq	kg CFC11 eq	mol H^+ eq	kg $(PO_4)^{3-}$ eq
Product stage	Raw material supply	A1	1.96E+00	1.95E+00	1.16E-02	7.27E-04	9.44E-08	1.07E-02	2.31E-03
	Transport	A2	4.78E-01	4.78E-01	7.34E-04	2.02E-04	1.04E-07	4.11E-03	3.27E-05
	Manufacturing	A3	1.53E+00	1.59E+00	-6.40E-02	1.72E-03	6.11E-08	2.85E-02	5.48E-04
	Total (Consumption grid)	A1-3	3.96E+00	4.01E+00	-5.17E-02	2.65E-03	2.59E-07	4.33E-02	2.89E-03
	Total (Residual+GO)	A1-3							
Construction process stage	Transport	A4	3.84E-02	3.83E-02	9.16E-05	1.29E-05	8.69E-09	1.53E-04	2.57E-06
	Construction	A5	8.96E-01	8.13E-01	8.39E-02	2.94E-06	1.71E-09	1.32E-04	1.63E-06
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Market Based Scenario (95% recycled and 5% landfill)									
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	8.32E-03	8.30E-03	1.99E-05	2.79E-06	1.88E-09	3.32E-05	5.57E-07
	Waste processing	C3	5.83E-02	5.60E-02	2.23E-03	2.95E-05	6.99E-09	1.47E-04	4.06E-06
	Disposal	C4	2.63E-04	2.62E-04	8.13E-07	7.12E-08	1.08E-10	2.48E-06	2.45E-08
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-6.27E-01	-6.01E-01	-2.50E-02	-5.70E-04	-4.74E-08	-2.08E-03	-2.37E-04

GWP-total = Global warming potential, total;
GWP-fossil = Global warming potential, fossil;
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; and
EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts									
			EP-marine	EP-terrestrial	POCP	ADP-mineral &metal	ADP-fossil	WDP	PM
			kg N eq	mol N eq	kg NMVOC eq	kg Sb eq	MJ, net calorific value	m^3 world eq deprived	disease incidence
Product stage	Raw material supply	A1	2.64E-03	2.09E-02	1.22E-02	1.66E-06	2.46E+01	2.89E-01	1.96E-07
	Transport	A2	1.05E-03	1.16E-02	3.30E-03	1.32E-06	6.97E+00	2.24E-02	3.28E-08
	Manufacturing	A3	2.28E-03	1.10E-01	6.44E-03	7.50E-05	3.86E+01	1.13E+00	2.05E-07
	Total (Consumption grid)	A1-3	5.97E-03	1.43E-01	2.19E-02	7.79E-05	7.01E+01	1.45E+00	4.34E-07
	Total (Residual+GO)	A1-3							
Construction process stage	Transport	A4	4.69E-05	5.12E-04	1.56E-04	1.38E-07	5.79E-01	1.65E-03	2.65E-09
	Construction	A5	1.46E-04	6.27E-04	1.65E-04	1.58E-08	1.51E-01	5.86E-03	8.21E-10
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Market Based Scenario (95% recycled and 5% landfill)									
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	1.02E-05	1.11E-04	3.39E-05	2.99E-08	1.26E-01	3.57E-04	5.75E-10
	Waste processing	C3	2.69E-05	2.92E-04	8.45E-05	6.46E-08	1.07E+00	1.41E-03	7.90E-10
	Disposal	C4	8.64E-07	9.47E-06	2.75E-06	5.87E-10	7.35E-03	3.30E-04	4.85E-11
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-4.65E-04	-4.71E-03	-1.33E-03	-6.36E-07	-1.03E+01	-1.84E-01	-3.28E-08

EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment;
EP-terrestrial = Eutrophication potential, accumulated exceedance;
POCP = Formation potential of tropospheric ozone;
ADP-fossil = Depletion potential of the stratospheric ozone layer;
WDP = Water (user) deprivation potential, deprivation-weighted water consumption; and
PM = Particulate matter.

ADP-mineral&metals = Abiotic depletion potential for non-fossil resources;

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts							
			IRP	ETP-fw	HTP-c	HTP-nc	SQP
			kBq U^{235} eq	CTUe	CTUh	CTUh	dimensionless
Product stage	Raw material supply	A1	5.16E-02	7.18E+01	2.07E-08	8.24E-08	3.48E+00
	Transport	A2	3.27E-02	5.61E+00	2.19E-10	5.18E-09	5.30E+00
	Manufacturing	A3	1.23E-01	4.87E+01	1.26E-09	3.29E-08	1.15E+01
	Total (Consumption grid)	A1-3	2.07E-01	1.26E+02	2.22E-08	1.20E-07	2.03E+01
	Total (Residual+GO)	A1-3					
Construction process stage	Transport	A4	3.02E-03	4.42E-01	1.58E-11	4.49E-10	3.99E-01
	Construction	A5	5.93E-04	2.96E-01	3.11E-11	1.27E-09	1.23E-01
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Market Based Scenario (95% recycled and 5% landfill)							
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	6.55E-04	9.59E-02	3.42E-12	9.74E-11	8.64E-02
	Waste processing	C3	1.88E-02	3.19E-01	9.64E-12	1.88E-10	1.82E-01
	Disposal	C4	3.28E-05	4.62E-03	1.38E-13	2.87E-12	1.54E-02
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-2.13E-01	-6.81E+00	-1.76E-08	-8.83E-09	-1.68E+00

IRP = Potential human exposure efficiency relative to U235;
ETP-fw = Potential comparative toxic unit for ecosystems;
HTP-c = Potential comparative toxic unit for humans;
HTP-nc = Potential comparative toxic unit for humans; and
SQP = Potential soil quality index.

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, primary energy

			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	6.46E-01	6.39E-02	7.09E-01	1.25E-04	2.46E+01	2.46E+01
	Transport	A2	5.27E-02	2.17E-02	7.45E-02	2.09E-04	6.97E+00	6.97E+00
	Manufacturing	A3	1.03E+00	1.55E+00	2.58E+00	6.10E-04	3.86E+01	3.86E+01
	Total (Consumption grid)	A1-3	1.73E+00	1.63E+00	3.36E+00	9.44E-04	7.01E+01	7.01E+01
	Total (Residual+GO)	A1-3						
Construction process stage	Transport	A4	5.68E-03	2.12E-03	7.80E-03	1.19E-05	5.79E-01	5.79E-01
	Construction	A5	2.50E-03	1.52E-03	4.02E-03	1.70E-06	1.51E-01	1.51E-01
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Market Based Scenario (95% recycled and 5% landfill)								
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	1.23E-03	4.60E-04	1.69E-03	2.58E-06	1.26E-01	1.26E-01
	Waste processing	C3	4.32E-02	3.59E-02	7.91E-02	4.24E-06	1.07E+00	1.07E+00
	Disposal	C4	4.03E-05	1.90E-05	5.92E-05	3.78E-08	7.35E-03	7.35E-03
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-7.86E-01	-3.09E-01	-1.10E+00	-4.25E-05	-1.03E+01	-1.03E+01

PERE = Use of renewable primary energy excluding renewable primary energy 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 resource

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, secondary materials and fuels, use of water						
			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m^3
Product stage	Raw material supply	A1	2.99E-01	0.00E+00	0.00E+00	2.10E-02
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	7.59E-04
	Manufacturing	A3	0.00E+00	0.00E+00	0.00E+00	2.75E-02
	Total (Consumption grid)	A1-3	2.99E-01	0.00E+00	0.00E+00	4.93E-02
	Total (Residual+GO)	A1-3				
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	6.26E-05
	Construction	A5	0.00E+00	0.00E+00	0.00E+00	1.44E-04
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Market Based Scenario (95% recycled and 5% landfill)						
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	1.36E-05
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	1.14E-04
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	7.87E-06
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	-6.80E-03

SM = Use of secondary material;
RSF = Use of renewable secondary fuels;
NRSF = Use of non-renewable secondary fuels;
FW = Net use of fresh water

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing waste categories					
			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	1.38E-05	1.14E+00	2.62E-05
	Transport	A2	1.60E-05	3.79E-01	4.66E-05
	Manufacturing	A3	3.97E-04	1.41E-01	4.16E-05
	Total (Consumption grid)	A1-3	4.27E-04	1.66E+00	1.14E-04
	Total (Residual+GO)	A1-3			
Construction process stage	Transport	A4	1.51E-06	2.77E-02	3.96E-06
	Construction	A5	8.92E-07	1.68E-01	5.43E-07
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00
Market Based Scenario (95% recycled and 5% landfill)					
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.27E-07	6.01E-03	8.59E-07
	Waste processing	C3	8.71E-07	1.53E-03	5.41E-06
	Disposal	C4	1.09E-08	5.00E-02	4.83E-08
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-6.36E-06	-2.65E-01	-5.92E-05

HWD = Hazardous waste disposed;
NHWD = Non-hazardous waste disposed;
RWD = Radioactive waste disposed

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing output flows – at end of life								
			CRU	MFR	MER	EE	Biogenic carbon (product)	Biogenic carbon (packaging)
			kg	kg	kg	MJ per energy carrier	kg C	kg C
Product stage	Raw material supply	A1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.02E-05
	Total (Consumption grid)	A1-3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.02E-05
	Total (Residual+GO)	A1-3						
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Construction	A5	0.00E+00	0.00E+00	3.02E-01	3.82E+00	0.00E+00	0.00E+00
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Market Based Scenario (95% recycled and 5% landfill)								
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	9.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU = Components for reuse;
MFR = Materials for recycling

MER = Materials for energy recovery;
EE = Exported Energy

Scenarios and additional technical information

Scenarios and additional technical information			
Scenario	Parameter	Units	Results
A4 – Transport to the building site	The results shown in this EPD considered a distribution scenario limited to the UK, assuming that 100% of the product is delivered throughout the UK by transport pallet networks. The transport distances have been calculated to cover the whole national territory based on primary data. These calculations are based on RAAFT's sales volume and distance from the manufacturing site to their client sites based on delivery postcodes. The postcodes have been grouped, and average distances have been calculated where applicable. The capacity utilisation factor is 50% which is based on the default assumption built into the Ecoinvent v3.7.1 dataset. Ecoinvent assumes an average loading of ~16 tonnes on a 32-tonne truck, accounting for partial loads and backhauls, resulting in an effective capacity utilisation of approximately 50%.		
	Fuel type / Vehicle type	Litre of fuel type per distance or vehicle type	Lorry 16-32 tonne, Euro 5
	Distance:	km	157.5
	Capacity utilisation (incl. empty returns)	%	50
	Bulk density of transported products	kg/m^3	N/A
A5 – Installation in the building	A5 includes the manual, free-standing installation of metal pedestals onto firm level surfaces (with minimal or no external machinery required) and the disposal of all packaging materials (timber pallets, PE wrap, corrugated boxes, and polyethylene polybags) at the construction site		
B1 – Use	N/A		
B2 – Maintenance	N/A		
B3 – Repair	N/A		
B4 – Replacement	N/A		
B5 – Refurbishment	N/A		
Reference service life	The reference service life of the product considered in this EPD is 15 years.		
B6 – Use of energy; B7 – Use of water	N/A		
C1 – Demolition	C1 covers the manual deconstruction and demolition of the metal pedestals at end of life, with 100% recovery assumed and minimal machinery use expected		
C2 – Transport	C2 includes transportation of waste materials approximately 50 km to appropriate end-of-life facilities (recycling centres and landfills) based on RICS Guidelines		
C3 – Waste Processing	C3 encompasses waste processing, with 95% of steel directed to recycling (collecting, sorting, cleaning, and pressing using processes similar to aluminium scrap as a proxy) and 5% to landfill		
C4 – Disposal	C4 represents the final disposal of the 5% landfilled steel at inert material landfill facilities.		

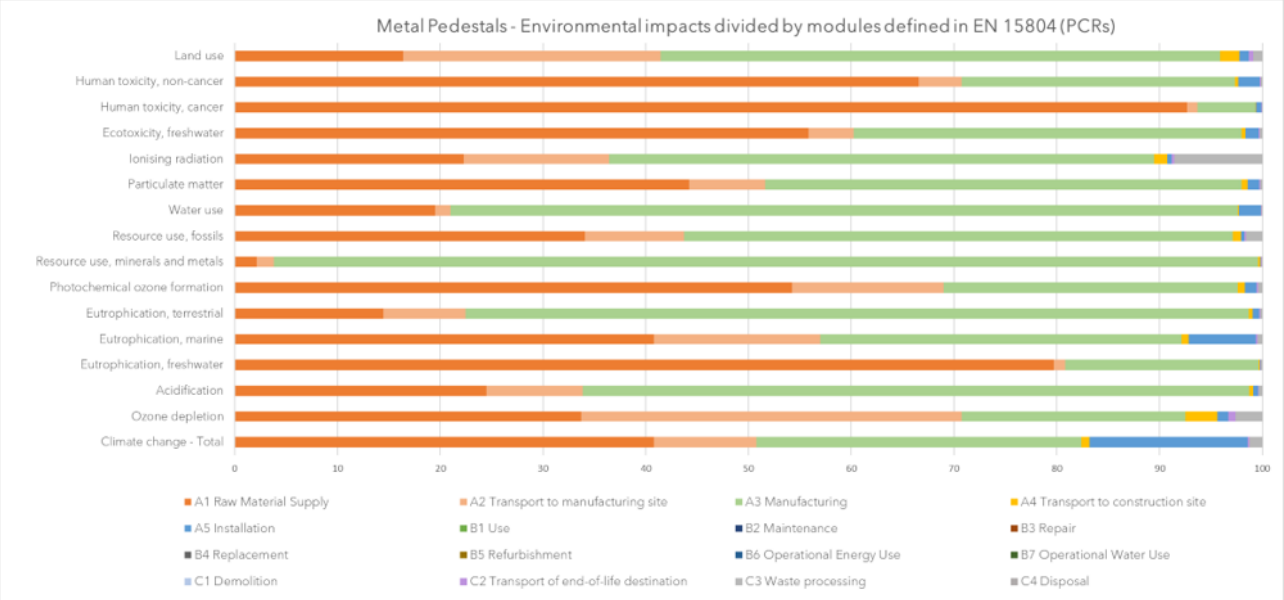
Scenarios and additional technical information			
Scenario	Parameter	Units	Results
Module D	Potential benefits and loads of reusable products, recyclable materials and useful energy carriers leaving the system boundaries at the end-of-waste state have been declared in module D. This module includes net benefits and loads arising from the reuse of products or the recycling or recovery of energy from end-of-waste state materials resulting from the construction stage (A4 – A5), the use stage (B) and the end-of-life stage (C). <u>Potential loads and benefits of net flows leaving the system boundaries in modules A5</u> The results presented in this EPD assume that a share of the packaging materials is disposed of in municipal incinerators with energy recovery (including both electricity and heating). The energy recovered can be used in subsequent product-systems, avoiding the production of the same amount of energy through other technologies. This avoided production represents a benefit beyond the system boundaries and has been included in module D. <u>Potential loads and benefits of net flows leaving the system boundaries in modules C1-C4</u> The first end-of-life scenario reported in this EPD assumes that 95% of the product at the end-of-life is recycled and 5% is sent to landfill. The benefit beyond the system boundaries of recycling steel to replace virgin materials (avoided production) has been calculated in this scenario and included in module D. The second end-of-life scenario reported in this EPD considers a full recyclability of the products at the end of their life. The benefit beyond the system boundaries of recycling 100% of the steel to replace virgin materials (avoided production) has been calculated in this scenario and included in module D. This therefore can be classified as a net benefit on the system and has been accounted for in Module D of this scenario.		
	Products Recycled Content (post-consumer)	Kg	0.30
	Recovered for recycling	Kg	0.95
	Recovered for re-use	Kg	0.00
	Recovered for energy	Kg	0.00

Summary, comments and additional information

Interpretation

The contribution analysis highlights the life cycle stages with the greatest environmental significance, informing where mitigation efforts would be most effective. The product stage (A1–A3) is the dominant contributor across all 16 impact categories, accounting for over 90% of total impacts, a pattern consistent with expectations for steel-intensive products. Raw material supply (A1) is the primary driver within this stage, reflecting the carbon and resource intensity of steel production. Industry average recycled versus virgin material ratios have been applied based on published national data, with the recycled scrap content set at 25%. Manufacturing (A3) is the other notable contributor, where packaging, specifically the use of polyethylene bags, accounts for a disproportionately high share of impacts relative to other inputs. No use-phase impacts have been identified for this product. At end of life, a 95% recycling diversion rate substantially limits the contribution of C-stage modules. Key improvement opportunities include increasing recycled scrap content in raw material inputs, reviewing PE bag packaging to improve capacity or reduce quantity per unit, and collecting primary data from the steel and powder coating suppliers to reduce reliance on secondary assumptions.

The figure below shows the environmental impacts of the metal pedestal, expressed through 16 main impact categories and divided by each phase of the life cycle that has been analysed.



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Ecoinvent 3.7.1 (https://ecoinvent.org/the-ecoinvent-database/data-releases/ecoinvent-3-7-1/)

SimaPro 9.3.0.3 software. SimaPro is a registered trademark of PRé Sustainability B.V. (https://simapro.com/)