Statement of Verification

BREG EN EPD No: 000851 Issue: 01

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

Birkdale Sales

are in accordance with the requirements of:

EN 15804:2012+A2:2019

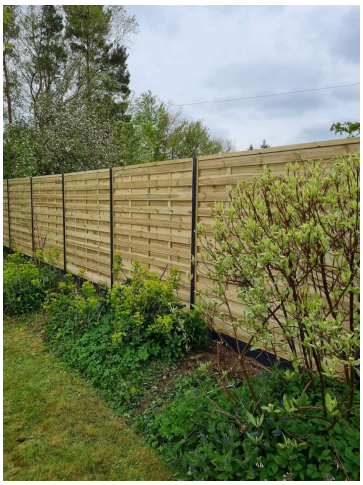
and

BRE Global Scheme Document SD207

This declaration is for:
1 unit of DuraPost® COMMERCIAL 74MM | 3400MM GALV with a weight of 23.08 kg.

Company Address

Birkdale Sales
Granville House, The Heights Business Park
Ibstone Road
Stokenchurch
HP14 3BG
United Kingdom



Signed for BRE Global Limited

Hayley Thomson
Operator

27 October 2026	27 October 2026	26 October 2031
Date of this Issue	Date of First Issue	Expiry Date

This Statement of Verification is issued subject to terms and conditions (for details visit www.greenbooklive.com/terms.
To check the validity of this statement of verification please, visit www.greenbooklive.com/check or contact us.

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Environmental Product Declaration

EPD Number:000850

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE 2025 Product Category Rules (PN 514 Rev 3.2) for Type III environmental product declaration of construction products to EN 15804:2012+A2:2019.
Commissioner of LCA study	**LCA consultant/Tool**
Birkdale Sales Granville House, The Heights Business Park Ibstone Road Stokenchurch HP14 3BG United Kingdom	Mustafa Ali/ BRE LINA A2
Declared/Functional Unit	**Applicability/Coverage**
1 unit of DuraPost® COMMERCIAL 74MM | 3400MM GALV with a weight of 23.08 kg.	Product Specific.
EPD Type	**Background database**
Cradle to Grave	Ecoinvent 3.8

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: Kim Allbury
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

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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)

Voestalpine Metsec Plc
Broadwell Road,
Oldbury,
West Midlands.
B69 4HF

Construction Product:

Product Description

DuraPost Commercial is a cold roll-formed steel fence post, made from galvanised steel strip of grade HX380LADZ275, to EN 10346, with a zinc coating of 275g/m2 (declared coating thickness 20µm).

The post is supplied with pre-drilled holes for fixing rails and other fence components. The steel has a tensile strength (transverse) of 440-560 MPa and a minimum elongation (A80) of 19%. Further dimensions and properties are given in the Technical Information table.

Posts are offered in galvanised only finish, or galvanised and powder coated, to BS 13438 - polyester powder coating, applied as a free-flowing dry powder, T.G.I.C free. The galvanised only finish has been modelled for this LCA.

The post is intended for use for heavy-duty residential fencing requirements, and commercial fencing. It is installed in the ground and used with arris rail, close board or panel fencing. The composition of the post does not change during use (see Use Information).

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Technical Information

Property	Value, Unit
Steel type	HX380LADZ275
Steel tensile strength, Rm, MPa	440-560 (Transverse)
Steel elongation A80, min, %	19% minimum
Corrosion protection	275g/m^2 zinc coating
Available length of coated Commercial Durapost	3400mm
Flange widths of coated Commercial Durapost	74mm
Web lengths of coated Commercial Durapost	3400mm
Static load of coated Commercial Durapost	1447kg
Coating type	20 µm Galvanised
Powder and coating standard	EN 10346



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Main Product Contents

Enter text

Material/Chemical Input	%
Hot tip coated galvanized steel	100

Manufacturing Process

Roll Forming is the process of shaping strip metal by passing it through a series of specially designed shaped rolls, the process has high levels of repeatability and very tight tolerances.The roll forming process can manufacture typical shaped profiles such as Channel, Angles, Boxes and Round Tube but is also able to form more complex profiles required for demanding technical solutions. The process is highly automated using modern control systems and can accommodate the piercing of holes and bespoke cut to length requirements of the customer The process includes fully integrated automated and semi-automated packaging reducing handling. The finished product is stored in warehouse facilities in Coventry prior to shipment to the customer. The manufacturing process requires electricity and fuels for product movement and loading as well as heating. All waste produced at Metsec is sold for recycling or is shipped to Energy Recovery Facilities. Waste raw material (steel) from the manufacturing process is 2.26%. Plastic strapping and timber are used for packaging and is required to ensure safe delivery of product to the customer.

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Process flow diagram

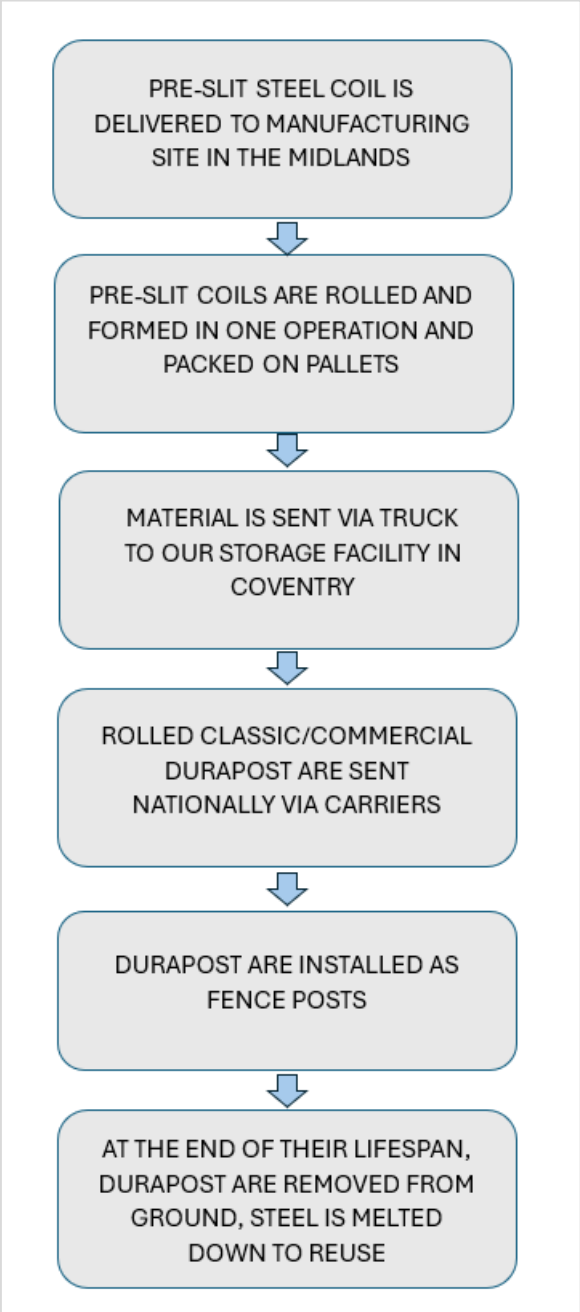


Figure caption: Steel scrap as production waste is sent for recycling. Of non-production wastes, general waste is incinerated while DMR/inert waste is recycled.

Construction Installation

Installation and proper use of steel post products depends on the application and should be made in accordance with generally accepted practices, standards, and manufacturing recommendations. During transport and storage of steel post products the usual requirements for securing loads are to be observed.

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Use Information

The composition of the steel post products does not change during use. Steel post products do not cause adverse health effects under normal conditions of use. No risks to the environment and living organisms are known to result from the mechanical destruction of the steel post product itself. A regular cleaning programme will enhance the appearance of the steel posts, the recommended cleaning cycle is once a year.

End of Life

Steel post products are not reused at end of life but can be recycled to the same (or higher/lower) quality of steel depending upon the metallurgy and processing of the recycling route. It is a high value resource, so efforts are made to recycle steel scrap rather than disposing of it at EoL. A recycling rate of 95% will be considered in this EPD.

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Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1 unit of DuraPost® COMMERCIAL 74MM | 3400MM GALV with a weight of 23.08 kg.

System boundary

This is a cradle-to-grave EPD, reporting all production life cycle stages of modules from A1 to C4 and includes module D as well in accordance with EN 15804:2012+A2:2019.

Data sources, quality and allocation

The supporting LCA study was carried out using BRE LINA A2 using manufacturer-specific data provided by Birkdale for the production period of the 12 months of 2024 at the Oldbury, England site. The supplier provided the data for the stated production amount of the product rather than whole site. As such there was no need for allocation. Secondary data has been obtained for all other upstream and downstream processes that are beyond the control of the manufacturer (i.e. raw material production) from the ecoinvent 3.8 database. All Ecoinvent datasets are complete within the context used and conform to the system boundary and the criteria for the exclusion of inputs and outputs, according to the requirements specified in EN15804.

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Quality Level	Geographical representativeness	Technical representativeness	Time representativeness
Very Good	Data from area under study.	Data from processes and products under study. Same state of technology applied as defined in goal and scope (i.e. identical technology).	There is approximately 3-4 years between the Ecoinvent LCI reference year, and the time period for which the LCA was undertaken

Table E.1 from EN 15804+A2, Annex E has been used to assess the data quality of relevant data. Specific UK datasets have been selected from the ecoinvent LCI for this LCA. The quality level of geographical and technical representativeness is therefore very good. The quality level of time representativeness is very good as the background LCI datasets are based on ecoinvent v3.8 which was compiled in 2021. Therefore, there is less than 5 years between the ecoinvent LCI reference year and the time period for which the LCA was undertaken.
Location -based approach has been used for the electricity mix. UK 2022 Consumption mix was used for electricity with an emissions factor of 0.239kgCO2e/kWh. UK Natural gas data (at industrial furnace) was used with an emissions factor of 0.232 kgCO2eq/kWh.
Additionally, LCA-method Cut-off, EN 15804+A2 has been used. Characterisation factors are based on Annex C of EN15804 Standard (Table C.1).
Mass balance is within 5% range as stipulated by the EN15804+A2 standard.

Cut-off criteria

All raw materials, packaging materials, transportation, process energy, general energy, water use, production and non-production waste have been included where appropriate. Only direct emissions to air, water and soil, which are not measured, have been excluded.

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LCA Results (1 unit of DuraPost® COMMERCIAL 74MM | 3400MM GALV with a weight of 23.08 kg)

(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	5.87E+01	5.84E+01	2.32E-01	5.55E-02	3.32E-06	7.68E-01	2.84E-02
	Transport	A2	4.02E+00	4.02E+00	5.57E-04	2.57E-03	8.32E-07	1.00E-01	1.65E-04
	Manufacturing	A3	7.28E-01	8.50E-01	-1.23E-01	7.18E-04	1.16E-07	2.24E-03	9.24E-05
	Total (Consumption grid)	A1-3	6.34E+01	6.33E+01	1.10E-01	5.88E-02	4.27E-06	8.70E-01	2.87E-02
Construction process stage	Transport	A4	3.76E-01	3.76E-01	3.21E-04	1.48E-04	8.70E-08	1.53E-03	2.42E-05
	Construction	A5	2.98E-02	6.02E-03	2.38E-02	7.67E-06	8.40E-10	2.84E-05	2.04E-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
100% Recycling Scenario									
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	1.92E-01	1.92E-01	1.64E-04	7.53E-05	4.44E-08	7.79E-04	1.24E-05
	Waste processing	C3	1.26E+00	1.26E+00	4.46E-04	1.26E-04	2.70E-07	1.31E-02	3.91E-05
	Disposal	C4	6.09E-03	6.08E-03	6.02E-06	5.74E-06	2.46E-09	5.72E-05	5.57E-07
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-2.30E+01	-2.31E+01	7.24E-02	-6.54E-03	-9.23E-07	-8.39E-02	-9.13E-03

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

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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	7.90E-02	2.83E+00	2.62E-01	2.21E-03	6.50E+02	2.90E+01	9.45E-06
	Transport	A2	2.49E-02	2.76E-01	7.21E-02	7.75E-06	5.39E+01	1.61E-01	1.84E-07
	Manufacturing	A3	6.71E-04	7.18E-03	2.02E-03	3.75E-06	2.18E+01	7.93E-02	2.51E-08
	Total (Consumption grid)	A1-3	1.05E-01	3.11E+00	3.36E-01	2.22E-03	7.26E+02	2.92E+01	9.66E-06
Construction process stage	Transport	A4	4.60E-04	5.02E-03	1.54E-03	1.31E-06	5.68E+00	2.56E-02	3.25E-08
	Construction	A5	8.64E-06	8.12E-05	2.43E-05	3.44E-08	7.11E-02	1.63E-01	3.69E-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
100% Recycling Scenario									
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	2.35E-04	2.56E-03	7.85E-04	6.67E-07	2.90E+00	1.31E-02	1.66E-08
	Waste processing	C3	5.81E-03	6.37E-02	1.75E-02	6.49E-07	1.73E+01	4.00E-02	3.51E-07
	Disposal	C4	1.99E-05	2.18E-04	6.33E-05	1.39E-08	1.70E-01	7.79E-03	1.15E-09
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.99E-02	-2.11E-01	-1.16E-01	-1.74E-05	-2.34E+02	-1.66E+00	-1.55E-06

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

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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	3.42E+00	2.33E+03	4.22E-07	2.28E-06	2.10E+02
	Transport	A2	2.53E-01	3.57E+01	2.18E-09	2.81E-08	1.62E+01
	Manufacturing	A3	4.87E-01	9.21E+00	4.11E-10	5.78E-09	1.76E+01
	Total (Consumption grid)	A1-3	4.16E+00	2.37E+03	4.25E-07	2.31E-06	2.44E+02
Construction process stage	Transport	A4	2.92E-02	4.44E+00	1.44E-10	4.65E-09	3.91E+00
	Construction	A5	6.87E-04	9.39E-02	1.71E-11	1.73E-10	3.22E-02
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
100% Recycling Scenario							
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	1.49E-02	2.26E+00	7.33E-11	2.37E-09	1.99E+00
	Waste processing	C3	7.80E-02	1.01E+01	3.92E-10	7.35E-09	2.20E+00
	Disposal	C4	7.54E-04	1.07E-01	2.72E-12	7.05E-11	3.56E-01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-4.14E-01	-6.92E+02	-1.24E-07	-4.75E-07	-4.56E+01

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.

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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	5.73E+01	0.00E+00	5.73E+01	6.43E+02	0.00E+00	6.43E+02
	Transport	A2	4.82E-01	0.00E+00	4.82E-01	5.28E+01	0.00E+00	5.28E+01
	Manufacturing	A3	4.26E+00	1.35E+00	5.62E+00	2.37E+01	2.74E+00	2.65E+01
	Total (Consumption grid)	A1-3	6.20E+01	1.35E+00	6.34E+01	7.20E+02	2.74E+00	7.22E+02
Construction process stage	Transport	A4	8.01E-02	0.00E+00	8.01E-02	5.58E+00	0.00E+00	5.58E+00
	Construction	A5	-2.02E-01	2.07E-01	4.97E-03	-2.94E-01	3.40E-01	4.60E-02
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
100% …… Scenario								
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	4.09E-02	0.00E+00	4.09E-02	2.85E+00	0.00E+00	2.85E+00
	Waste processing	C3	9.70E-02	0.00E+00	9.70E-02	1.70E+01	0.00E+00	1.70E+01
	Disposal	C4	1.45E-03	0.00E+00	1.45E-03	1.67E-01	0.00E+00	1.67E-01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-4.81E+00	0.00E+00	-4.81E+00	-2.31E+02	0.00E+00	-2.31E+02

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

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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	8.93E+00	0.00E+00	0.00E+00	7.15E-01
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	4.00E-03
	Manufacturing	A3	6.54E-03	1.22E-05	0.00E+00	4.20E-03
	Total (Consumption grid)	A1-3	8.94E+00	1.22E-05	0.00E+00	7.23E-01
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	6.34E-04
	Construction	A5	0.00E+00	0.00E+00	0.00E+00	3.79E-03
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
100% Recycling Scenario						
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	3.23E-04
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	9.88E-04
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	1.82E-04
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	-4.02E-02

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

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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	2.08E+01	1.04E+02	1.49E-03
	Transport	A2	6.82E-02	7.27E-01	3.71E-04
	Manufacturing	A3	2.39E-02	4.17E-01	1.54E-04
	Total (Consumption grid)	A1-3	2.09E+01	1.05E+02	2.02E-03
Construction process stage	Transport	A4	6.27E-03	1.11E-01	3.85E-05
	Construction	A5	4.79E-04	2.37E-02	1.75E-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
100% Recycling Scenario					
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	3.20E-03	5.68E-02	1.96E-05
	Waste processing	C3	2.28E-02	1.60E-01	1.20E-04
	Disposal	C4	1.77E-04	2.49E-03	1.11E-06
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-2.13E+00	-4.39E+01	-2.48E-04

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

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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	2.11E-04	9.86E-08	9.95E-03	0.00E+00	4.08E-02
	Total (Consumption grid)	A1-3	0.00E+00	2.11E-04	9.86E-08	9.95E-03	0.00E+00	4.08E-02
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	7.24E-03	0.00E+00	0.00E+00	7.20E-03	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
100% Recycling Scenario								
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	0.00E+00	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

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Scenarios and additional technical information

Scenarios and additional technical information			
Scenario	Parameter	Units	Results
A4 – Transport to the building site	Transport out of Birkdale manufacturer to warehouse is 48 km. Transport out of Birkdale warehouse to Birkdale's customer and then to the construction site, including provision of all materials and products assumed to be 50Km.		
	Vehicle type:	Lorry diesel 16-32 ton	
	Distance from manufacturing site to warehouse:	48km	
	Distance from warehouse to site:	50 km	
	Weight of transported product	23.08 kg	
A5 – Installation in the building	Installation of coated Durapost is a relatively simple process： installers need to dig an 800mm deep hole for one coated Durapost using a spade. The coated Durapost is then placed into the hole and secured in place using fast-setting post concrete. Fast-setting cement has not been included in the LCA.		
	Tap water	3.75 L	
	Plastic waste for recycling	0.008 kg	
	Pallet wood wate for incineration	0.0148 kg	
B1 - Use	The product will remain installed as a post and will have no associated environmental impacts.		
B2 – Maintenance	The recommended maintenance is cleaning down the product with water and a mild detergent. No activity data has been modelled.		
B3 – Repair	No repair process required.		
B4 – Replacement	No replacement considerations required.		
B5 – Refurbishment	No refurbishment process required.		
B6 – Use of energy; B7 – Use of water	No water or energy required during use stage.		
C1	At the end of its life, the DuraPost steel post is removed by breaking away the concrete around its base. Once the concrete is loosened, the post is lifted out either by hand or with light machinery. Any leftover concrete stuck to the post is knocked off so the steel can be separated for recycling. 100% recovery rate for the product during the deconstruction process.		
C2	A transport distance of 50Km has been used in this analysis. The end user can modify this at their end to assess impacts from transportation.		
	Transport: Lorry diesel 16-32 ton	50 Km	
C3	At the end of life 95%steel is separated for recycling.		
	Steel post for recycling	21.93 kg	
C4	At the end of life 5%steel is sent for landfilling.		
	Steel post for landfilling	1.15 kg	

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Scenarios and additional technical information			
Scenario	Parameter	Units	Results
Module D	When calculating the benefits of recycling steel, the pre-existing recycled content has been removed, and the benefits have been calculated only for virgin steel. The pre-existing recycled content in the Steel dataset is 37.61%; therefore, the benefits have been calculated by excluding the recycled content. That is, the benefits are calculated based solely on the virgin steel content. Pre - existing recycled content (post-consumer waste) = 8.25 kg Benefits due to recycling of virgin steel = 13.68kg.		
	Products Recycled Content (post consumer)	13.68 kg	

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Summary, comments and additional information

Interpretation

The following chart shows the relative contributions of the different modules to Global Warming Potential (GWP). The bulk of the environmental impact can be attributed to the raw material stage, i.e., Module A1. Overall, A1 accounts for 99% of life cycle impacts for this category.

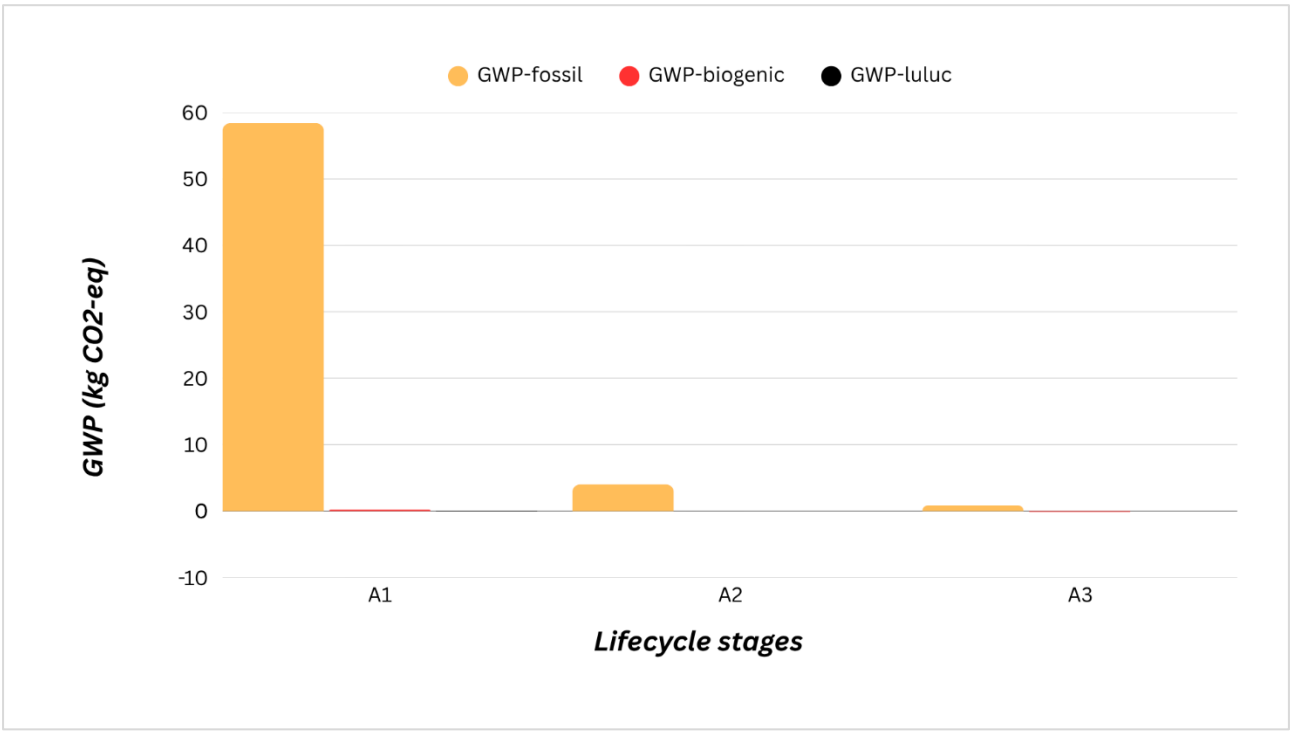


Figure 1

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