



Statement of Verification

BREG EN EPD No: 000814

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:

1 kg of planter product with powder-coated or CorTen A finish with the 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



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.

BRE Global Ltd., Garston, Watford WD25 9XX
T: +44 (0)333 321 8811 F: +44 (0)1923 664603 E: Enquiries@breglobal.com





Environmental Product Declaration

EPD Number: 000814

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
1 kg of planter product with powder-coated or CorTen A finish with the 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)

Planters sold by RAAFT are manufactured by RAAFT from steel sourced from the European region.

Construction Product:

Product Description

RAAFT design and manufacture premium quality steel planter panels that are available in standard sizes suited to a wide range of designs. The planters are available in following finishes with additional finishes as per client requirements – CorTen A and Powder Coated Mild Steel. Both products undergo similar processing and are steel based (of differing grades).

The planters are available in two product specifications:

- Planterline Custom
- Planterline Bespoke

Technical Information

The Planterline products come in three types and are detailed below

(<https://www.raaftsystems.com/products/Planter-systems>).

This study commissioned by RAAFT provides the environmental impact of the planters are available in two finishes: (1) Corten A - Planters with CorTen A and (2) Planters with powder coating.

Corten A is a type of weathering steel which was developed to remove the need for regular painting and rust-prevention maintenance. This is achieved by the formation of a natural stable coating of dark brown oxidation across the metal's surface which acts as a barrier to the corrosive effects. When delivered, the Corten will contain mill-scale which will remove over time prior to the natural stable coating of dark brown being achieved. The weathering process can take around 18 months.

Powder coating starts with shotblasting of the steel which removes mill-scale, oxide dirt, oil and grease from the substrate; followed by a 7-stage zinc phosphate pre-treatment process for to prepare the surface. The product then receives the polyester powder coating to the requested colour.

Both these options are included in this EPD.



Product Name	Colour	Dimensions		Other	
Planterline Custom and Bespoke	Powder Coated or CorTen	Maximum Straight panel length	2400 mm	Material Specification	CorTen A steel materials class A EN10029
		Maximum returns at corners	1000 mm (limited to one side)		
		Height range	300-1100 mm	Corner Types	Folded
		Steel thickness	3mm	Top return	40 mm single top



CorTen



PPC

Main Product Contents

The planters are manufactured by RAAFT. The powder coated planters undergo an additional powder coating step (only based on customer requirements). All other inputs and steps within the manufacturing of the two product options are identical.

Material/Chemical Input – CorTen A	%
Steel (including both recycled and virgin content)	100
Recycled content	18.6

Material/Chemical Input – Powder Coated	%
Steel (including both recycled and virgin content)	100
Recycled content	51.2

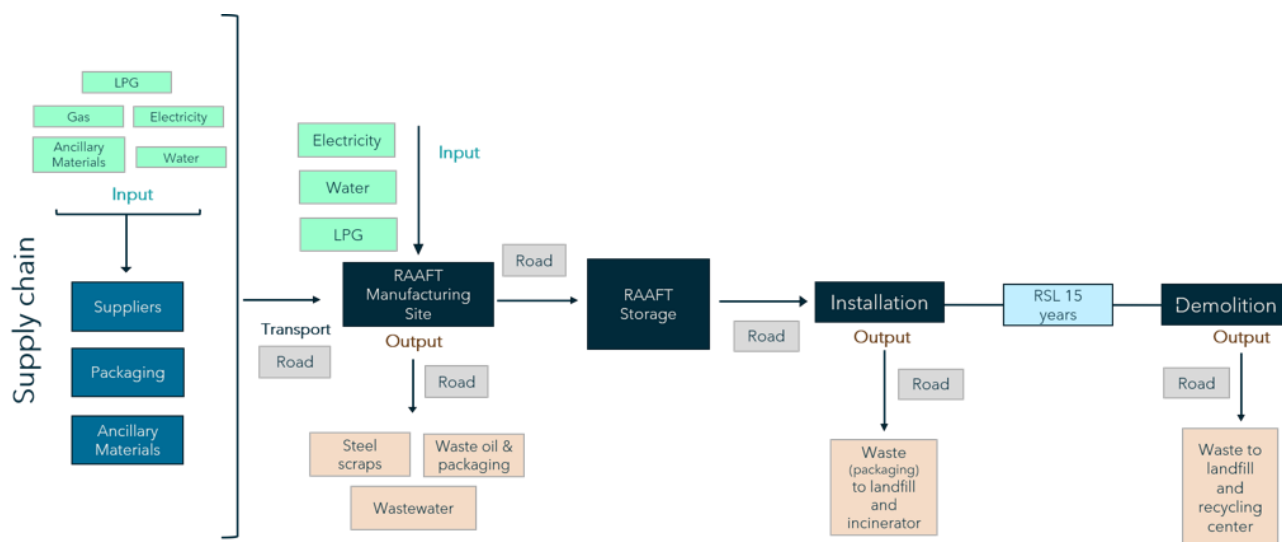
Manufacturing Process

The planters are manufactured by RAAFT's own manufacturing facility located in the United Kingdom. The steel is purchased from steel makers in the European region which then undergoes processing to manufacture the planters. The powder coating, packaging materials and ancillary materials are mostly sourced locally from within the United Kingdom.

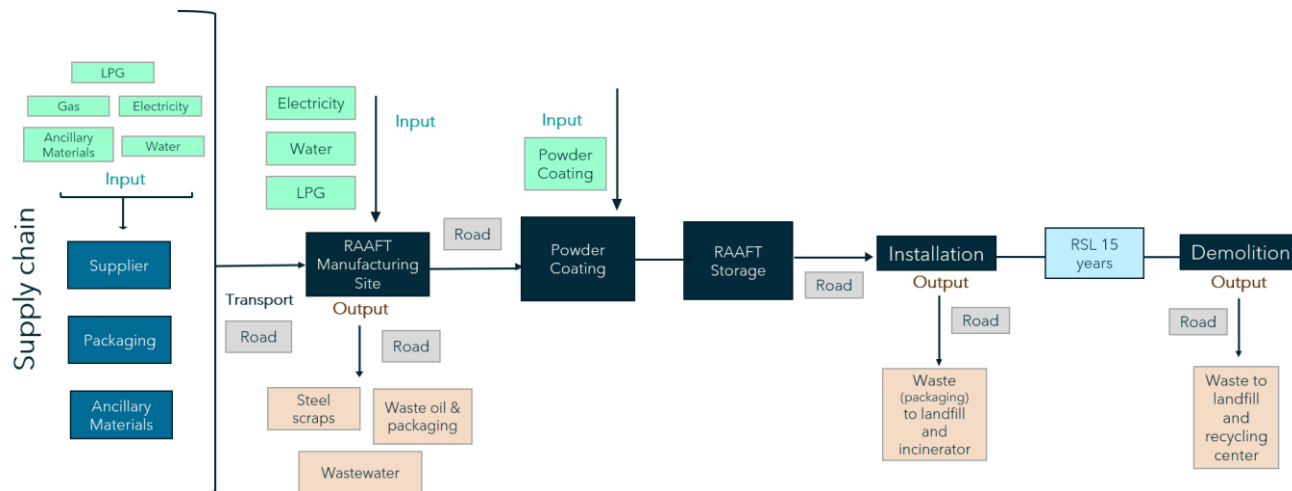
The manufacturing process is the same for both products, differing only in product finishing. CorTen A planters require no additional treatment, whereas powder coated planters undergo an additional finishing step at a separate facility of zinc powder coating, which adds an extra transport and processing stage to the supply chain. Waste generated during manufacturing, primarily steel scrap, is sold for recycling, while waste oil is collected by registered dealers and disposed of via hazardous waste incineration. Packaging waste generated during repacking at the storage site is disposed of locally, with timber managed through a combination of recycling and energy recovery, and plastic through incineration.

Process flow diagram

Option 1: Planters with CorTenA



Option 2: Planters with powder coating



Construction Installation

The planters are free-standing installations that require two people to lift each segment and join them. In the exceptional case that it includes any machinery, the use is expected to be limited and infrequent. Installation is completed manually in most cases owing to the location of installations which are usually terraces. A drill may be used from time to time but its use can be considered almost negligible as no welding is required. Therefore, this has been excluded from the assessment. There is no waste from installation – waste packaging is directed to landfill and incineration.

Use Information

The reference service life of the product considered in this EPD is 15 years. The product is entirely made of 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 composed entirely of a single material (steel), which facilitates efficient end-of-life management. 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 Steel? in United Kingdom as 95% sent for recycling and 5% to the landfill.

Life Cycle Assessment Calculation Rules

Declared unit description

1 kg of planter product with powder-coated or CorTen A finish with the 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 Planters from Cradle-to-Grave. Therefore, the system boundaries include:

- Production Stage - A1 – A3: A1 covers the extraction and processing of raw materials, including steel sourced from multiple suppliers, with secondary data used to model the associated material impacts. Manufacturing processes such as cutting and CNC machining, which take place at the manufacturer's facility, have been included within the energy data. A2 includes transportation of raw materials, ancillary materials, and packaging to the manufacturing site, as well as transport of finished products between facilities. A3 encompasses the manufacturing processes at the manufacturer's facility., since A1-A3 includes multiple sites therefore please make a summary of the upstream A1-A3 process
- 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. Primary data for energy and water consumption associated with the powder coating process was not available at sufficient detail, so this stage was modelled using a secondary Ecoinvent dataset scaled to the product specification. Energy and water consumption are embedded within this secondary dataset and are therefore not reported separately as primary inputs.

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 and their suppliers over a 12-month reference period, combined with consistent secondary Ecoinvent v3.7.1 data, gives an overall time

representativeness rating of Very Good. UK-based material and process origins align with the geographic scope of the datasets used, giving a Good geographical representativeness rating. Selected datasets closely reflect actual production and waste treatment practices across the supply chain, with a small number of proxy datasets rated Fair, 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 an economic 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 {GB}| market for | Cut-off, S" which reflects the consumption mix from the UK national grid and has a GWP of 0.256 kgCO₂e/kWh. The natural gas consumption was modelled using the secondary data "Heat, district or industrial, natural gas {RER}| market group for | Cut-off, S" with the emission factor of 0.0513 kg CO₂ eq per MJ and the impacts from LPG consumption were modelled using the secondary data "liquefied petroleum gas {Europe without Switzerland}| market for liquefied petroleum gas | Cut-off, S" with the emission factor of 0.644 kg CO₂ eq per kg.

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 RAAFT manufacturing facility, waste arising from the powder coating process has been excluded as it is considered non-material and not expected to influence the overall results. At the RAAFT storage facility, the site functions solely as a distribution facility where products are stored under ambient conditions with minimal lighting; no fossil fuel energy consumption has been accounted for, and minor packaging waste was considered negligible and excluded. Non-production wastes, including original packaging waste from raw material suppliers and waste from general office or administrative processes across manufacturing, coating, or storage sites, have also been excluded as these are not directly attributable to the manufacturing of the planters and are considered immaterial to the product system.

LCA Results – Planters (CorTen A)

(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	3.31E+00	3.28E+00	2.56E-02	1.28E-03	2.06E-07	1.38E-02	1.48E-03
	Transport	A2	4.34E-02	4.33E-02	9.09E-05	1.21E-05	1.02E-08	1.79E-04	2.82E-06
	Manufacturing	A3	8.87E-02	1.35E-01	-4.68E-02	2.18E-04	1.23E-08	4.91E-04	3.05E-05
	Total (Consumption grid)	A1-3	3.44E+00	3.46E+00	-2.12E-02	1.51E-03	2.29E-07	1.44E-02	1.51E-03
	Total (Residual+GO)	A1-3							
Construction process stage	Transport	A4	2.71E-02	2.71E-02	6.48E-05	9.11E-06	6.15E-09	1.08E-04	1.82E-06
	Construction	A5	2.41E-02	2.15E-03	2.20E-02	5.02E-07	1.24E-10	5.21E-06	2.82E-07
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	-2.12E-01	-2.05E-01	-6.61E-03	-2.26E-04	-1.24E-08	-9.00E-04	-1.22E-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 – Planters (CorTen A) (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	3.21E-03	3.31E-02	1.48E-02	4.27E-05	3.59E+01	9.43E-01	2.28E-07
	Transport	A2	5.53E-05	6.04E-04	1.94E-04	1.02E-07	6.75E-01	2.22E-03	3.89E-09
	Manufacturing	A3	1.21E-04	1.20E-03	3.46E-04	4.49E-07	3.45E+00	2.79E-03	2.82E-09
	Total (Consumption grid)	A1-3	3.38E-03	3.49E-02	1.53E-02	4.32E-05	4.00E+01	9.48E-01	2.35E-07
	Total (Residual+GO)	A1-3							
Construction process stage	Transport	A4	3.32E-05	3.62E-04	1.11E-04	9.75E-08	4.09E-01	1.16E-03	1.87E-09
	Construction	A5	2.17E-06	2.05E-05	5.43E-06	2.39E-09	1.19E-02	-1.02E-04	5.90E-11
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	-1.96E-04	-1.93E-03	-5.53E-04	-1.57E-07	-2.95E+00	-1.01E-01	-1.77E-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-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.

LCA Results – Planters (CorTen A) (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	1.86E-01	8.21E+01	1.83E-08	7.00E-08	1.83E+01
	Transport	A2	3.46E-03	5.18E-01	1.60E-11	5.56E-10	7.71E-01
	Manufacturing	A3	1.05E-01	2.05E+00	1.73E-10	1.17E-09	4.91E+00
	Total (Consumption grid)	A1-3	2.95E-01	8.47E+01	1.85E-08	7.17E-08	2.39E+01
	Total (Residual+GO)	A1-3					
Construction process stage	Transport	A4	2.14E-03	3.13E-01	1.12E-11	3.18E-10	2.82E-01
	Construction	A5	1.23E-04	1.04E-02	1.02E-12	3.94E-11	6.07E-03
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	-5.85E-02	-2.97E+00	-1.00E-08	-4.53E-09	-3.78E-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.



LCA Results – Planters (CorTen A) (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	2.48E+00	6.63E-01	3.15E+00	4.39E-04	3.59E+01	3.59E+01
	Transport	A2	6.25E-03	1.99E-03	8.24E-03	9.06E-06	6.75E-01	6.75E-01
	Manufacturing	A3	2.54E-01	9.19E-01	1.17E+00	8.30E-05	3.45E+00	3.45E+00
	Total (Consumption grid)	A1-3	2.74E+00	1.58E+00	4.33E+00	5.31E-04	4.00E+01	4.00E+01
	Total (Residual+GO)	A1-3						
Construction process stage	Transport	A4	4.01E-03	1.50E-03	5.51E-03	8.43E-06	4.09E-01	4.09E-01
	Construction	A5	5.18E-04	1.18E-04	6.36E-04	1.59E-07	1.19E-02	1.19E-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
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	-3.02E-01	-5.32E-02	-3.55E-01	-1.09E-05	-2.95E+00	-2.95E+00

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 – Planters (CorTen A) (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	2.37E-01	0.00E+00	0.00E+00	2.55E-02
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	7.83E-05
	Manufacturing	A3	3.75E-01	0.00E+00	0.00E+00	1.12E-03
	Total (Consumption grid)	A1-3	2.37E-01	0.00E+00	0.00E+00	2.67E-02
	Total (Residual+GO)	A1-3				
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	4.42E-05
	Construction	A5	0.00E+00	0.00E+00	0.00E+00	5.44E-07
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	-3.51E-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 – Planters (CorTen A) (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	2.23E-04	1.57E+00	9.67E-05
	Transport	A2	1.63E-06	5.86E-02	4.62E-06
	Manufacturing	A3	2.13E-06	1.27E-02	2.78E-05
	Total (Consumption grid)	A1-3	2.26E-04	1.64E+00	1.29E-04
	Total (Residual+GO)	A1-3			
Construction process stage	Transport	A4	1.07E-06	1.96E-02	2.80E-06
	Construction	A5	2.35E-08	2.17E-03	7.16E-08
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	-1.47E-06	-1.46E-01	-1.77E-05

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



LCA Results – Planters (CorTen A) (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	4.72E-06
	Total (Consumption grid)	A1-3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.72E-06
	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	0.00E+00	0.00E+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	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

LCA Results – Planters (with powder coating)

(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	2.13E+00	2.10E+00	2.11E-02	8.10E-04	1.49E-07	9.13E-03	9.35E-04
	Transport	A2	2.68E-02	2.68E-02	5.63E-05	7.49E-06	6.29E-09	1.11E-04	1.74E-06
	Manufacturing	A3	3.14E-01	3.52E-01	-3.92E-02	6.98E-04	4.13E-08	2.30E-02	2.08E-04
	Total (Consumption grid)	A1-3	2.47E+00	2.48E+00	-1.80E-02	1.52E-03	1.97E-07	3.22E-02	1.15E-03
	Total (Residual+GO)	A1-3							
Construction process stage	Transport	A4	2.71E-02	2.71E-02	6.48E-05	9.11E-06	6.15E-09	1.08E-04	1.82E-06
	Construction	A5	2.41E-02	2.15E-03	2.20E-02	5.02E-07	1.24E-10	5.21E-06	2.82E-07
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	-2.14E-01	-2.07E-01	-6.75E-03	-2.27E-04	-1.27E-08	-9.04E-04	-1.22E-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 – Planters (with powder coating) (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	2.10E-03	2.18E-02	9.05E-03	2.60E-05	2.32E+01	3.55E-01	1.52E-07
	Transport	A2	3.42E-05	3.74E-04	1.20E-04	6.32E-08	4.17E-01	1.37E-03	2.41E-09
	Manufacturing	A3	1.10E-03	9.86E-02	1.32E-03	6.83E-05	7.03E+00	1.71E-01	1.56E-07
	Total (Consumption grid)	A1-3	3.24E-03	1.21E-01	1.05E-02	9.43E-05	3.07E+01	5.28E-01	3.10E-07
	Total (Residual+GO)	A1-3							
Construction process stage	Transport	A4	3.32E-05	3.62E-04	1.11E-04	9.75E-08	4.09E-01	1.16E-03	1.87E-09
	Construction	A5	2.17E-06	2.05E-05	5.43E-06	2.39E-09	1.19E-02	-1.02E-04	5.90E-11
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	-1.97E-04	-1.95E-03	-5.57E-04	-1.61E-07	-3.00E+00	-1.01E-01	-1.77E-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-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.



LCA Results – Planters (with powder coating) (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	1.18E-01	5.05E+01	1.18E-08	4.33E-08	1.29E+01
	Transport	A2	2.14E-03	3.20E-01	9.93E-12	3.44E-10	4.76E-01
	Manufacturing	A3	1.51E-01	3.09E+01	8.75E-10	2.41E-08	5.95E+00
	Total (Consumption grid)	A1-3	2.70E-01	8.18E+01	1.27E-08	6.78E-08	1.94E+01
	Total (Residual+GO)	A1-3					
Construction process stage	Transport	A4	2.14E-03	3.13E-01	1.12E-11	3.18E-10	2.82E-01
	Construction	A5	1.23E-04	1.04E-02	1.02E-12	3.94E-11	6.07E-03
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	-5.96E-02	-2.99E+00	-1.00E-08	-4.54E-09	-3.89E-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.

LCA Results – Planters (with powder coating) (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	1.99E+00	4.46E-01	2.43E+00	2.91E-04	2.32E+01	2.32E+01
	Transport	A2	3.86E-03	1.23E-03	5.10E-03	5.61E-06	4.17E-01	4.17E-01
	Manufacturing	A3	5.43E-01	9.71E-01	1.51E+00	1.02E-04	7.03E+00	7.03E+00
	Total (Consumption grid)	A1-3	2.53E+00	1.42E+00	3.95E+00	3.99E-04	3.07E+01	3.07E+01
	Total (Residual+GO)	A1-3						
Construction process stage	Transport	A4	4.01E-03	1.50E-03	5.51E-03	8.43E-06	4.09E-01	4.09E-01
	Construction	A5	5.18E-04	1.18E-04	6.36E-04	1.59E-07	1.19E-02	1.19E-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
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	-3.04E-01	-5.56E-02	-3.60E-01	-1.12E-05	-3.00E+00	-3.00E+00

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 – Planters (with powder coating)) (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	6.50E-01	0.00E+00	0.00E+00	1.17E-02
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	4.84E-05
	Manufacturing	A3	0.00E+00	0.00E+00	0.00E+00	6.25E-03
	Total (Consumption grid)	A1-3	6.50E-01	0.00E+00	0.00E+00	1.80E-02
	Total (Residual+GO)	A1-3				
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	4.42E-05
	Construction	A5	0.00E+00	0.00E+00	0.00E+00	5.44E-07
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	-3.52E-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 – Planters (with powder coating)) (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	1.32E-04	1.08E+00	6.82E-05
	Transport	A2	1.01E-06	3.62E-02	2.86E-06
	Manufacturing	A3	3.92E-04	3.96E-02	4.28E-05
	Total (Consumption grid)	A1-3	5.26E-04	1.15E+00	1.14E-04
	Total (Residual+GO)	A1-3			
Construction process stage	Transport	A4	1.07E-06	1.96E-02	2.80E-06
	Construction	A5	2.35E-08	2.17E-03	7.16E-08
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	-1.52E-06	-1.46E-01	-1.80E-05

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



LCA Results – Planters (with powder coating)) (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	4.72E-06
	Total (Consumption grid)	A1-3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.72E-06
	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	0.00E+00	0.00E+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	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

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%. This scenario is applicable for both product variants.		
	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	In the A5 module, there is the disposal of the packaging materials. The number of materials required to produce the packaging in module A3, is assumed to be disposed of once the product is installed into the terrace system. There has been no waste generation during the installation process. This scenario is applicable for both product variants.		
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 planters at end of life, with 100% recovery assumed. This scenario is applicable for both product variants.		
C2 – Transport	C2 includes transportation of waste materials approximately 50 km to end-of-life facilities. This scenario is applicable for both product variants.		
C3 – Waste Processing	C3 encompasses waste processing, with 95% of steel directed to recycling (collecting, sorting, cleaning, and pressing) and 5% to landfill. This scenario is applicable for both product variants.		
C4 – Disposal	C4 represents the final disposal of the 5% landfilled material at inert material landfill facilities. This scenario is applicable for both product variants.		

Scenarios and additional technical information

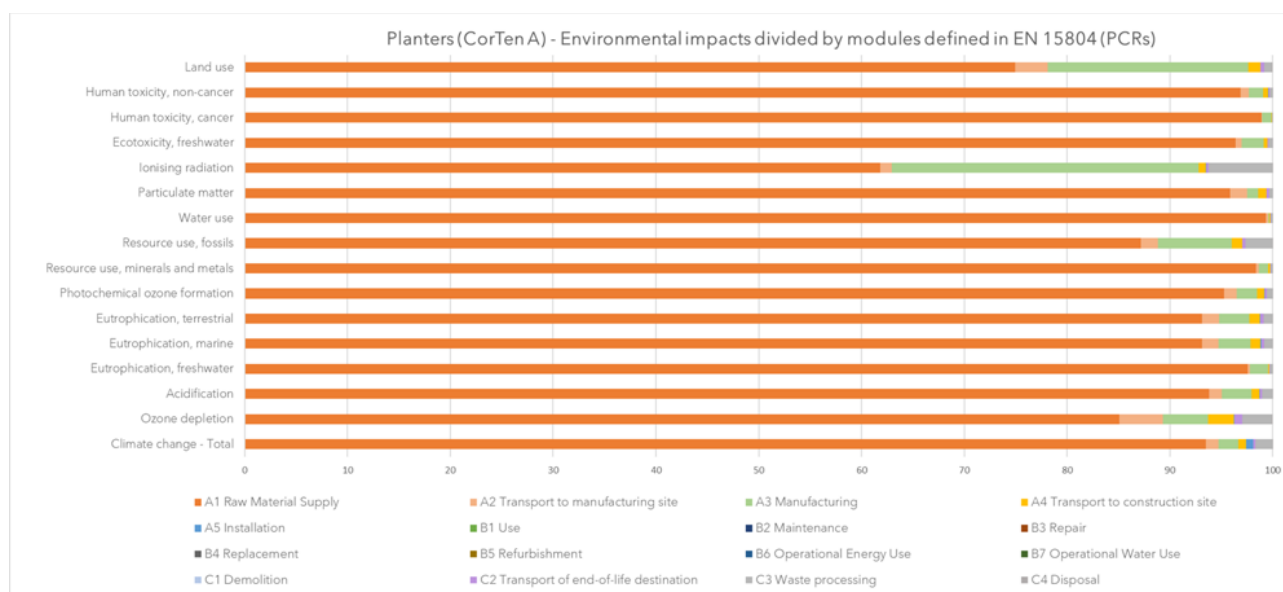
Scenario	Parameter	Units	Results
Module D	Potential benefits and loads of reusable products, recyclable materials and useful energy carriers leaving the system boundaries at the end-of-waste state have been declared in module D. This module includes net benefits and loads arising from the reuse of products 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.		
	Planters with CorTen A		
	Products Recycled Content (post-consumer)	kg	0.24
	Recovered for recycling	kg	0.95
	Recovered for re-use	kg	0.00
	Recovered for energy	kg	0.00
	Planters with Powder Coating		
	Products Recycled Content (post-consumer)	kg	0.65
	Recovered for recycling	kg	0.95
	Recovered for re-use	kg	0.00
	Recovered for energy	kg	0.00

Summary, comments and additional information

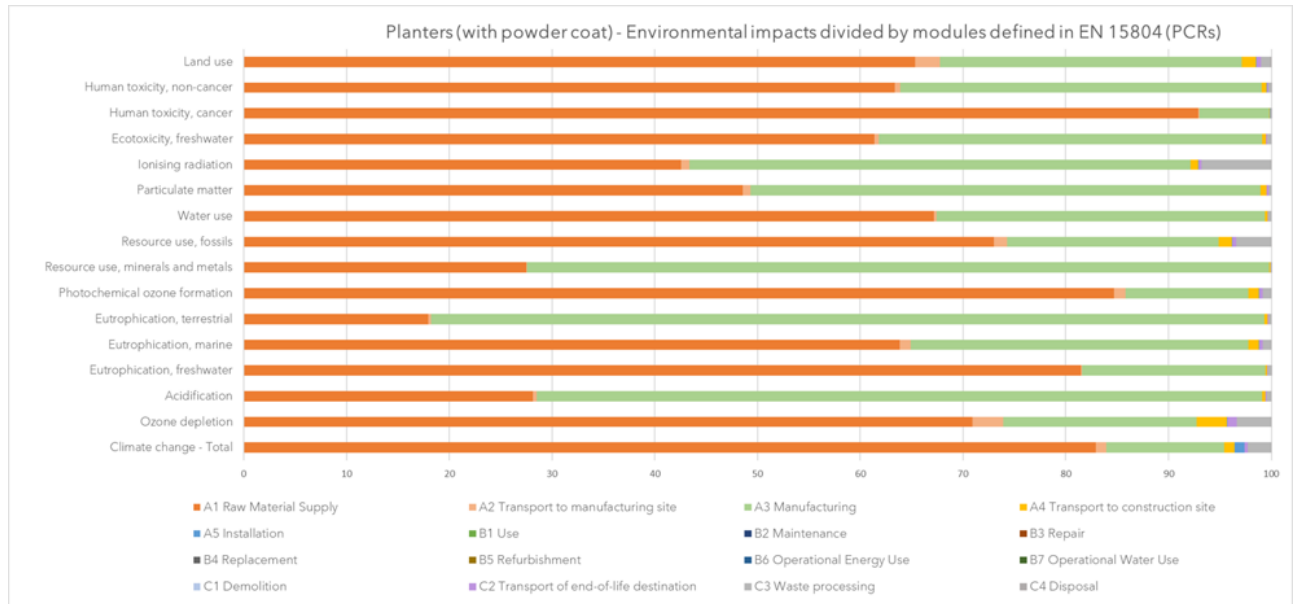
Interpretation

The contribution analysis highlights the life cycle stages with the greatest environmental significance for both planter products, informing where mitigation efforts would be most effective. For both products, the product stage (A1–A3) accounts for over 90% of total impacts across all 16 assessed categories, a pattern consistent with expectations for steel-intensive products. Raw material supply (A1) is the dominant contributor for both, driven by the carbon and resource intensity of steel production. The two products share identical supply chains, with the sole difference being the addition of a powder coating process in Product 2. This additional step results in higher overall impacts for the powder-coated planters, particularly in A3 manufacturing, where the powder coating process, including zinc inputs, drives elevated impacts across specific categories. No use-phase impacts have been identified for either product. At end of life, a 95% recycling diversion rate substantially limits the contribution of C-stage modules for both products. Increasing the recycled scrap content in raw material inputs represents the most effective improvement opportunity across both product types.

The figures below show the environmental impacts of the planter, expressed through 16 main impact categories and divided by each phase of the life cycle that has been analysed.



Planter – CorTen A



Planter – With Powder Coating



References

BSI. Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products. BS EN 15804:2012+A2:2019. London, BSI, 2019.

BSI. Environmental labels and declarations – Type III Environmental declarations – Principles and procedures. BS EN ISO 14025:2010 (exactly identical to ISO 14025:2006). London, BSI, 2010.

BSI. Environmental management – Life cycle assessment – Principles and framework. BS EN ISO 14040:2006. London, BSI, 2006.

BSI. Environmental management – Life cycle assessment – requirements and guidelines. BS EN ISO 14044:2006. London, BSI, 2006.

BSI. Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products. BS EN 15804:2012+A2:2019.

RAAFT Systems, Product Overview and Technical Documentation

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/>)