Biax® FOUNDATIONS

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Void former

from Biax Foundations

Environmental Product Declaration

Programme:	EPD International AB www.environdec.com
Regional Programme:	EPD Australasia www.epd-australasia.com
EPD Registration Number:	EPD-IES-0021002:001
EPD Owner	Biax Foundations Pty Ltd
Publication date:	2025-06-17
Valid until:	2030-06-16

EPD of multiple products, based on a weighted average of void former production, covering Biax pods, keystone connectors and auschairs.
See a full list of included products on page 8

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

EPD INTERNATIONAL EPD SYSTEM

AUSTRALASIA EPD® INTERNATIONAL EPD SYSTEM

ECO PLATFORM EPD VERIFIED

General information

EPD Owner

Company name	Biax Foundations Pty Ltd
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Programme information

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EPD Developer

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LCA accountability	Paul-Antoine Bontinck, Life Cycle Strategies Pty Ltd

PCR and Verifier Information

CEN standard EN 15804 served as the core PCR

Product Category Rules (PCR)

Product Category Rules (PCR): PCR 2019: Construction Products, Version 1.3.4, 2024-03-30 (valid until 2025-06-20)

PCR review was conducted by:

The Technical Committee of the International EPD® System. See www.environdec.com for a list of members.

Most recent review chair: Claudia A. Peña, PINDA LCT SpA, Chile.

The review panel may be contacted via the Secretariat www.environdec.com/contact

Third-party verification

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

☑ EPD verification by individual verifier

Third-party verifier: Claudia A. Peña, PINDA LCT SpA, Chile **Approved by:** EPD Australasia

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

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Contents

Biax® FOUNDATIONS

Revolutionising Foundations

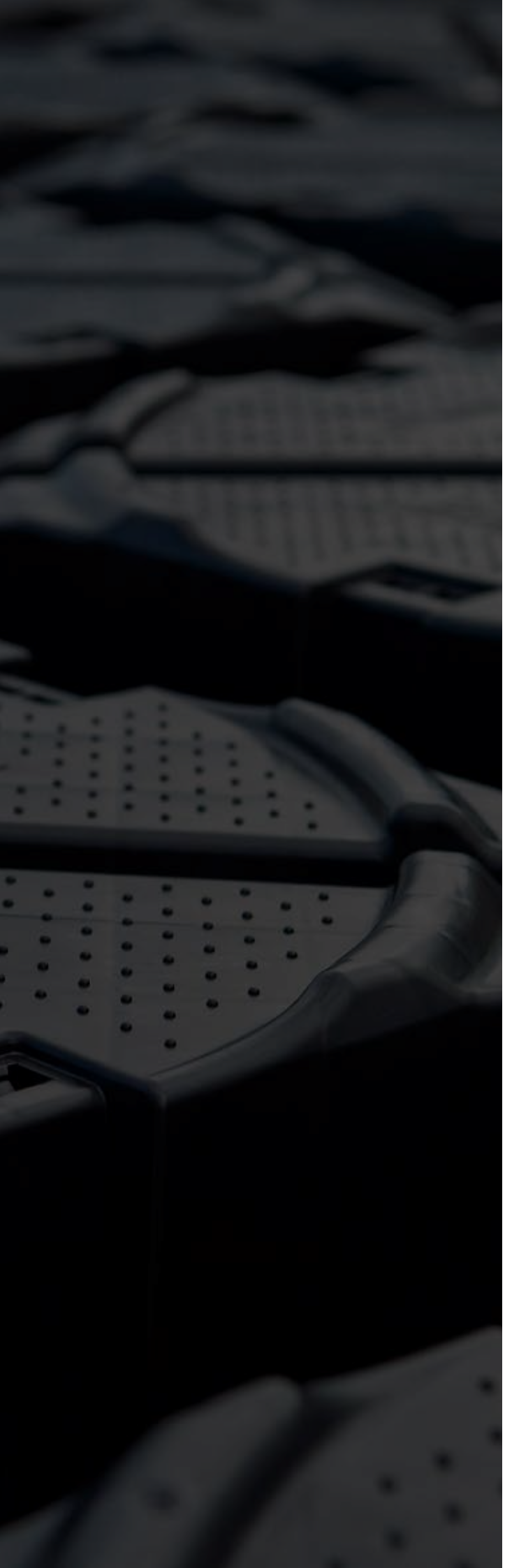
The environmentally sustainable alternative to EPS waffle pods.

Made from 100% recycled plastic & 100% recyclable

Australian made

Faster, safer and easier to install

Fully compliant to Australian Standards



About Biax

Biax Foundations is committed to enhancing residential foundations within the construction sector. Our focus encompasses performance, cost-effectiveness, and sustainable building practices.

In the 1990s, polystyrene pods were commonly used in “waffle” slab construction due to their perceived advantages. However, as environmental concerns emerged, structural engineer Fabio Parodi sought a better solution, resulting in the development of the X-pod, now recognised as Biax in Australia.

We take pride in being an Australian-made and owned company, reflecting our dedication to local manufacturing

Our team is passionate about delivering high-quality solutions that meet the diverse needs of our clients. We invite you to explore our offerings and see how Biax Foundations can support your next project.

Biax Contact

Chris London
General Manager

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0430 086 193

Product information

Product name: Biax Foundations™

UN CPC Code: 3695 Builders' ware of plastics n.e.c.
Geographical Scope: Australia

Product Description:

Biax Foundations is a fully patented, eco-friendly foundation system that offers builders, engineers, concreters, and homeowners a more sustainable foundation option.

Comprising a range of engineered components, our biaxial slab system can be tailored to fit any slab configuration, minimising on-site waste and environmental pollutants without compromising building code compliance. Biax Pods are available in a variety of options to suit your unique requirements.

Biax Foundations is supported by its own specialised three-dimensional finite element analysis software. Unlike traditional methods, Wafflesuite employs advanced waffle raft *on-mound* analyses, enhancing accuracy and efficiency in structural assessments. For more information, visit Wafflesuite.

Product Benefits

Easily Transported
Pods for a 180sqm home can be delivered on a single axle trailer

Lightweight + Easy To Handle
Each pods weighs less than 2.5KG

No Cutting No Waste
Fully adjustable system
Fits any size foundation
No cutting of pods
Providing a totally clean site

Easy storage on site
Significantly reduced storage space required on site

AUTOPod Design Software
Produces fully optimised pod layout and bill of quantities in seconds

No bar chairs required
Engineered ridges eliminates the need for bar chairs

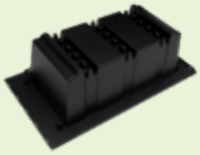
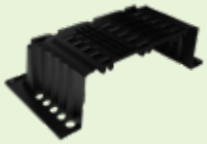
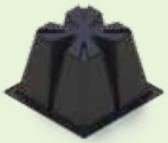
Improves concrete yield
No pod movement during concrete pour due to keystone connection.
Avoids concretes blowouts and overages.




Product list and physical characteristics

This EPD was developed for multiple products, based on the average results of the product group, based on the weight of product manufactured.

The table opposite lists the products being represented by this EPD. It provides the mass of each individual components. This EPD reports environmental impacts per mass of void former. The mass per item reported in the table below can be used to convert the environmental impacts of Biax Foundations' void former reported here into environmental impacts per item, but multiplying the environmental impact per declared unit by the mass of the item considered.

SKU	Picture	Mass per item grams	Dimension mm
BIAX Pod 750/215mm - Primary Pod		2 427	L: 750 W: 750 H: 227
BIAX Pod 750/145mm - Step Down Pod		2 172	L: 750 W: 750 H: 180
BIAX Mini Pod 400/215mm		1 249	L: 750 W: 400 H: 226
BIAX Mini Pod 400/145mm		1 091	L: 750 W: 400 H: 156
BIAX Mini 400/215mm Adjustable		1 300	L: 742 W: 427 H:288
BIAX Keystone Connector 12/16		126	L: 173 W: 173 H:106
BIAX Pod 750/500mm - Large Pod		4 200	L: 750 W: 750 H:500
BIAX Keystones Connector 20		225	L: 265 W: 265 H:115
Auschair		137	L: 300 W: 300 H:50

Welcome to the future of foundations.

LCA information

Declared unit:

One tonne (1 000 kg) of Biax Foundations void former products.

Time representativeness:

2024-01-01 - 2024-11-30

Database(s) and LCA software used:

SimaPro® LCA software version 10.1.0.2 was used for the LCA modelling and calculation of impacts. All global background data are sourced from ecoinvent version 3.10.1, allocation recycling cut-off, EN 15804 model (Weidema et al. 2023). Australian energy use models are based on AusLCI version 2.44 (Lifecycles 2024) modified for compliance against EN 15804. Both databases include resource, waste and output flows as required under EN 15804. Background data is less than 10 years old or have been updated within that timeframe.

Description of system boundaries:

This EPD covers cradle to gate with options plus end-of-life stages (Modules A1-A3, A5, C1-C4, D). Modules A4, B1-B7 have been excluded from this study as these modules are best modelled at the final construction project level.

The system boundary includes:

Module A1:

Production/extraction of raw materials used to manufacture the void former products and packaging. This includes the production of post-consumer recycled polypropylene, timber used in the production of pallets and crude oil or natural gas for the production of linear low-density polyethylene for pallet wrapping and for woven polyethylene strapping.

Module A2:

Transport of raw material to the manufacturing plant.

Module A3:

Includes the electricity (residual grid mix) required for the injection moulding of Biax Foundations components and LPG to operate forklifts. Rejects occurring at machine start-ups and when moulds are changed are reinjected internally and as such no waste output is generated.

Module A5:

End-of-life processes for packaging including the release of any stored biogenic carbon. All packaging components are assumed to be sent to landfill at the construction site.

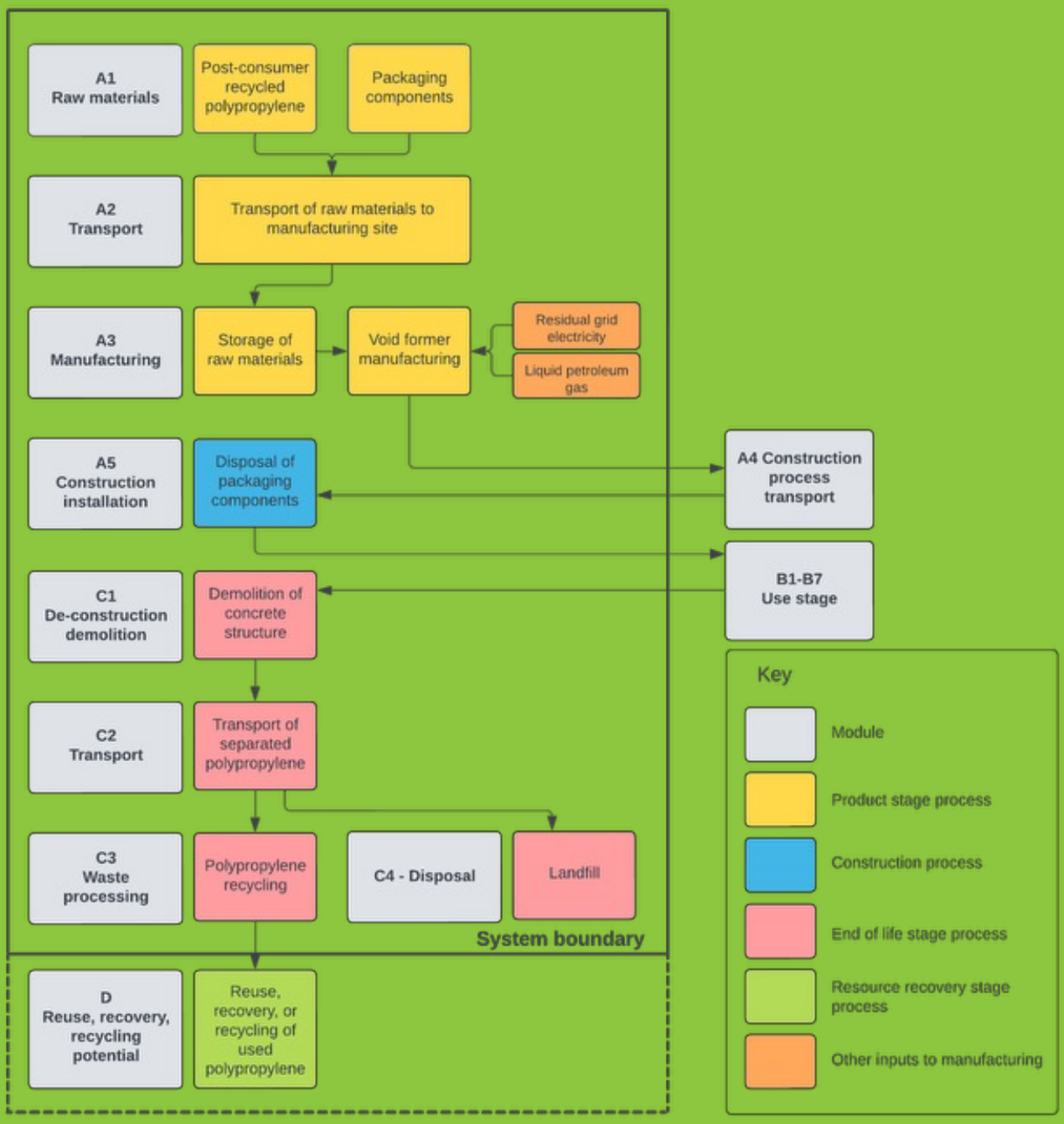
Module C:

Demolition of the construction at the end-of-life of the reinforced concrete element (C1), transportation of separated plastic waste (C2), waste processing (recycling – C3) and disposal (landfilling – C4).

Module D:

Reuse-recovery-recycling potential. Starting from the end-of-waste state, this module shows the benefit/impact from the net recycling of polypropylene in void former.

System Diagram



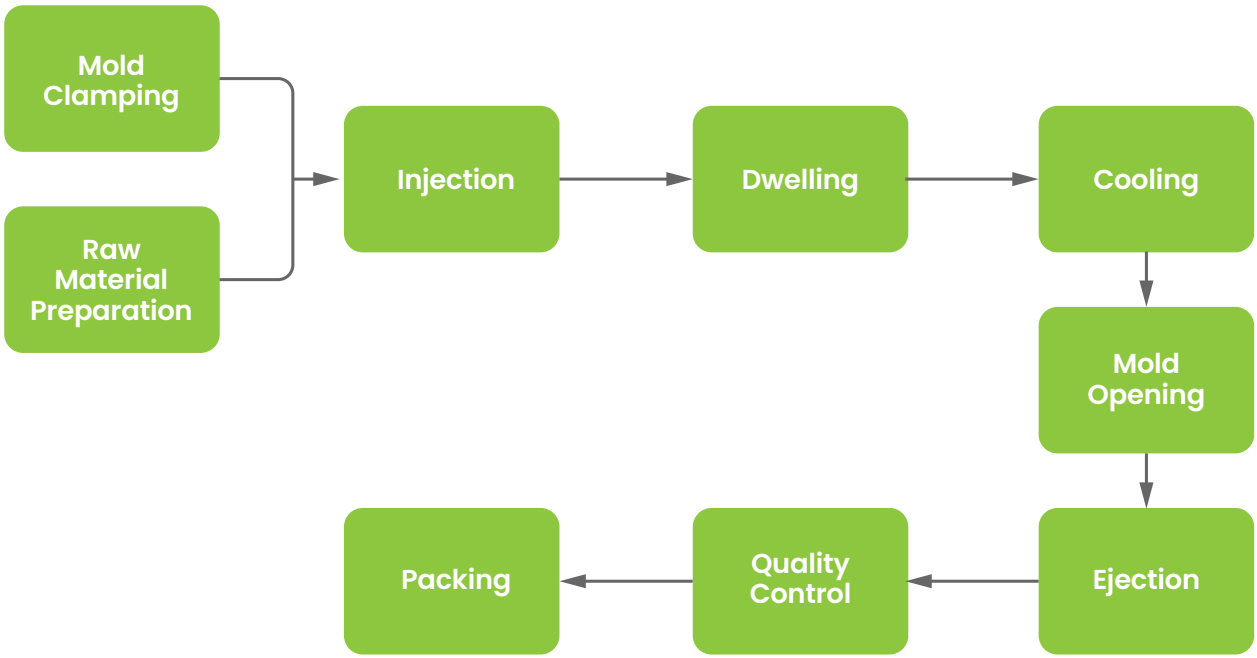
Cut-off criteria

Any excluded flows must fall below the cut-off threshold for this study (below 1% of any impact category included in the LCA). No flows were deliberately excluded due to this threshold, however particularly minor inputs expected to be well below this threshold were not considered. Infrastructure, production equipment, and personnel related activities are non-attributable and excluded from the system boundary.

Allocation of co-products

No allocation was required in the foreground model of this LCA.

Production process



Data quality

To ensure that the results produced by this LCA are of a reputable standard, the quality of the input data must be of sufficient standard. The data used must be the most recent and relevant as possible. Biax Foundations' void former products are manufactured at a single site located in Minto (New South Wales, Australia). All primary data used to represent the manufacturing process are recent, being representative of operations from 2024-01-01 to 2024-11-30. Australian-specific data was used whenever possible to represent key inputs, and where unavailable global data was used.

Post-consumer recycled polypropylene pellet production

Biax Foundations uses 100% post-consumer recycled polypropylene pellets, sourced from certified post-consumer waste, and imported from Malaysia.

As a post-consumer waste stream, none of the impacts from the previous life cycle are allocated to the recycled material, in line with the requirements of PCR 2019:14, Section 4.5.5 (The International EPD System 2024). The boundary of the system shall begin once the recovered material has reached the end-of-waste state, which is when it transitions between the life cycle producing the waste and the life cycle using the recovered material.

Section 4.5.5 of PCR 2019:14 specifies that for post-consumer scrap, the end-of-waste state is reached when the scrap is generated, assuming that it regains value as soon as it is collected. While this can be the case for construction waste – e.g. when steel scrap is collected and put in a skip as a separated stream, this assumption does not apply to post-consumer plastic waste, which must undergo significant separation and cleaning treatment before having any value.

In this case, we define the end-of-waste state using the criteria outlined in Section 4.5.2 of PCR 2019:14, which specifies that the end-of-waste state is reached when four criteria are met:

1. The recovered material is commonly used for specific purposes.
2. A market or demand exists for such a recovered material or product.
3. The recovered material fulfils the technical requirements for the specific purposes for which it is used and meets the existing legislation and standards applicable to its use.
4. The use of the recovered material will not ead to overall adverse environmental or human health impacts.

In the case of the secondary polypropylene material used by Biax Foundations, these four criteria are only met once the mixed post-consumer waste has been appropriately, separated, cleaned and pelletised, so that it reaches the technical requirements allowing it to be used in new application such as Biax Foundations' void former. As a result, the system boundary begins at the gate of the recycler from which Biax Foundations sources its raw material.

Treatment of packaging waste at Module A5

All packaging components are assumed to go to landfill during the construction stage. This is considered a conservative approach. Indeed, decomposition of timber pallets in landfill will result in methane emissions which would not occur with other end-of-life scenarios such as composting, thus resulting in larger impacts for indicators such as Global Warming.

Product end-of-life scenarios

The modelling of the void former's end-of-life is based on two generic scenarios. The void former manufactured by Biax Foundations is a relatively novel product, such that no primary data on current end-of-life could be used.
As a result, and to remain conservative, the baseline scenario considers that 100% of the void former will be disposed of in landfill. However, Biax Foundations' void former was developed to allow separation from the slab during demolition, making recycling possible. To represent the effects this would have on the results, a second scenario is reported on, whereby 100% of the void former is separated from the slab and recycled.

Determination of the net flow

Modelling of module D relies on the estimated net flows of recovered materials or energyware. In this analysis, it does not include the effects associated with landfilling or recycling, which are reported in Module C3 and C4.

Once a material has reached its end-of-waste state, the recovered material can be used in a subsequent life cycle as a material input. In this case, the end-of-waste stage is reached once a recycled polypropylene pellet has been produced. At this point, it is assumed that the recycled material will be able to displace an equivalent amount of virgin material, thus reducing the demand for virgin material overall. This net displacement, accounting for secondary material inputs and outputs across the life cycle, is what is being reported here in Module D.

The net flow of recovered material is calculated using the equation below below:

$$net\ flow = \sum Y \times (MR_{out} - MR_{in})$$

With:

Y: the material yield, between the point of end-of-waste and point of substitution, which was estimated to be, 0.93, as per the ecoinvent model 'Polyethylene, high density, granulate, recycled {Europe without Switzerland}| polyethylene production, high density, granulate, recycled | EN15804, U'.

MRout: the amount of material exiting the system that will be recovered in a subsequent system.

MRin: the amount of input material to the product system that has been recovered from a previous system. This was reported by Biax Foundations and amounted to 1000 kg per tonne of void former.

Two scenarios are being reported in this EPD:

1. 100% disposal at end-of-life

No void former reaches the end-of-waste state, as 100% is disposed of in landfill, which means that MRout is equal to zero. As a result, the net flow was calculated as -930 kg per tonne of void former, representing an additional virgin material production.

2. 100% recycling at end-of-life

In this scenario, 100% of the void former is collected and recycled, which means that MRin is equal to 1 000 kg per tonne of void former. As a result, the net flow of recovered material is equal to zero, as MRin and MRout cancel each other out. This means that no substitution occurs.

Environmental performance indicators

The environmental indicators for the impact categories described in this EPD are summarised in the tables below. Abbreviations for each indicator are used in the result tables for simplicity.

Table 1 Mandatory potential environmental impact indicators according to EN 15804:2012+A2:2019/AC:2021 – EF3.1 Reference Package

Indicator	Abbreviation	Unit
Global warming potential – fossil	GWPF	kg CO2 eq.
Global warming potential – biogenic	GWPB	kg CO2 eq.
Global warming potential - land use/land use change	GWPL	kg CO2 eq.
Global warming potential - total	GWPT	kg CO2 eq.
Ozone depletion potential	ODP	kg CFC 11 eq.
Acidification potential	AP	mol H+ eq.
Eutrophication potential – freshwater	EPF	kg P eq.
Eutrophication potential – marine	EPM	kg N eq.
Eutrophication potential – terrestrial	EPT	mol N eq.
Photochemical ozone creation potential	POCP	kg NMVOC eq.
Abiotic depletion potential – minerals & metals*	ADPE	kg Sb eq.
Abiotic depletion potential – fossil fuels*	ADPF	MJ
Water deprivation potential*	WDP	m3 H2O eq.

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

Table 2 Additional mandatory and voluntary potential environmental impact indicators according to EN 15804:2012+A2:2019/AC:2021

Indicator	Abbreviation	Unit
Global warming potential - excluding biogenic uptake, emissions, and storage	GWP-GHG	kg CO2 eq.
Particulate Matter emissions	PM	Disease incidence
Ionising Radiation – human health**	IRP	kBq U-235-eq.
Eco-toxicity – freshwater*	ETPF	CTUe
Human toxicity – cancer*	HTPC	CTUh
Human toxicity – non-cancer*	HTPNC	CTUh
Land use related impacts / soil quality*	SQP	Dimensionless

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

** Disclaimer: This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 3 Use of resources, waste production and output flows

Indicator		Abbreviation	Unit
Resource use			
Primary energy resources – Renewable	Use as energy carrier	PERE	MJ, net calorific value
	Used as raw materials	PERM	MJ, net calorific value
	Total	PERT	MJ, net calorific value
Primary energy resources – Non-renewable	Use as energy carrier	PENRE	MJ, net calorific value
	Used as raw materials	PENRM	MJ, net calorific value
	Total	PENRT	MJ, net calorific value
Use of secondary materials		SM	kg
Use of renewable secondary fuels		RSF	MJ, net calorific value
Use of non-renewable secondary fuels		NRSF	MJ, net calorific value
Net use of fresh water		FW	m3
Waste production			
Hazardous waste disposed		HWD	kg
Non-hazardous waste disposed		NHWD	kg
Radioactive waste disposed		RWD	kg
Output flows			
Components for reuse		CRU	kg
Material for recycling		MFR	kg
Materials for energy recovery		MER	kg
Exported energy – electrical		EEE	MJ per energy carrier
Exported energy – thermal		EET	MJ per energy carrier

Fo backwards comparability, the results according to EN15804+A1 impact categories are also included in this EPD, shown in Table 4.

Table 4 *EN 15804:2012+A1 impact categories*

Indicator	Abbreviation	Units	Characterisation model
Global warming potential	GWP	kg CO2 eq.	IPCC model based on 100 year timeframe based on IPCC 2007
Ozone depletion potential	ODP	kg CFC 11 eq.	CML-IA V4.1
Acidification potential	AP	kg SO2 eq.	CML-IA V4.1
Eutrophication potential	EP	kg PO43- eq.	CML-IA V4.1
Photochemical ozone creation potential	POCP	kg C2H4 eq.	CML-IA V4.1
Abiotic depletion potential – minerals & metals	ADPE	kg Sb eq.	CML-IA V4.1
Abiotic depletion potential – fossil fuels	ADPF	MJ (NCV)	CML-IA V4.1

Purchased electricity model

The electricity used at Biax Foundations' manufacturing facility (Module A3) is New South Wales residual grid electricity. The modelled residual mix results in climate change impacts of 0.81 kg CO2-eq / kWh against the GWP-GHG indicator. The residual electricity grid mix for New South Wales consists of coal (74%), hydropower (16%), solar PV (6.9%), natural gas (2.6%), oil (0.1%) and bagasse (0.4%).

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery -Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	ND	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	MY	AU/ GLO	AU	-	AU	-	-	-	-	-	-	-	AU	AU	AU	AU	AU
Specific data used	89%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%					-	-	-	-	-	-	-	-	-	-	-	-

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Post-consumer recycled polypropylene	1 000	100.0%	0%, 0
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Linear low-density polyethylene (LLDPE) pallet wrap	10	<1%	0
Woven polyethylene pallet strap	0.49	<1%	0
Wooden pallet	49	<5%	22
TOTAL	59	<5%	18

Biax Foundations' void former does not contain substances in the Candidate List of Substances of Very High Concern in the European Chemicals Agency in concentrations >0.1% of the weight of the product.

Results of the environmental performance indicators – per declared unit : 100% landfill at the end-of-life

Mandatory impact category indicators according to EN 15804:2012+A2:2019/AC:2021

Disclaimer: The use of the results of module A1-A3 without considering the results of module C is discouraged. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Results per declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	4.36E+02	8.42E+01	4.70E+00	7.72E+00	0.00E+00	9.70E+01	3.01E+03
GWP-fossil	kg CO2 eq.	4.20E+02	1.44E+00	4.69E+00	7.72E+00	0.00E+00	9.69E+01	2.98E+03
GWP-biogenic	kg CO2 eq.	1.37E+01	8.28E+01	2.61E-03	2.58E-03	0.00E+00	1.33E-01	2.95E+01
GWP-luluc	kg CO2 eq.	2.50E+00	3.23E-05	1.63E-04	2.26E-04	0.00E+00	4.96E-04	1.19E+00
ODP	kg CFC 11 eq.	9.95E-06	4.70E-09	7.38E-08	1.03E-07	0.00E+00	7.65E-08	7.96E-05
AP	mol H+ eq.	4.40E+00	2.90E-03	4.39E-02	2.10E-02	0.00E+00	4.78E-02	8.81E+00
EP-freshwater	kg P eq.	1.13E-02	4.36E-04	3.83E-05	1.57E-04	0.00E+00	9.80E-04	5.24E-01
EP-marine	kg N eq.	9.35E-01	2.01E-02	2.06E-02	7.64E-03	0.00E+00	2.19E-01	1.88E+00
EP-terrestrial	mol N eq.	1.03E+01	1.38E-02	2.26E-01	8.35E-02	0.00E+00	2.28E-01	1.92E+01
POCP	kg NMVOC eq.	2.86E+00	5.36E-03	6.72E-02	3.12E-02	0.00E+00	9.21E-02	1.23E+01
ADP-minerals & metals*	kg Sb eq.	1.59E-05	1.49E-08	1.96E-07	4.58E-07	0.00E+00	2.07E-07	2.79E-04
ADP-fossil*	MJ	5.17E+03	4.20E+00	6.18E+01	1.03E+02	0.00E+00	6.83E+01	7.55E+04
WDP*	m3	1.29E+02	8.22E-03	8.05E-02	1.45E-01	0.00E+00	1.19E-02	6.96E+02

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

Additional mandatory and voluntary impact category indicators

Results per declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP-GHG	kg CO2 eq.	4.23E+02	4.13E+00	4.70E+00	7.72E+00	0.00E+00	9.70E+01	2.98E+03
PM	Disease incidence	1.97E-05	7.67E-08	1.26E-06	5.15E-07	0.00E+00	1.28E-06	1.12E-04
IRP**	kBq U-235 eq.	2.45E+00	9.81E-04	1.31E-02	1.57E-02	0.00E+00	1.48E-02	9.85E+01
ETPF*	CTUe	4.37E+02	8.49E+00	2.14E+00	6.79E+00	0.00E+00	2.96E+02	2.68E+04
HTPC*	CTUh	2.16E-07	1.40E-10	3.30E-10	6.51E-10	0.00E+00	3.70E-09	8.28E-07
HTPNC*	CTUh	1.16E-06	2.23E-08	4.70E-09	5.11E-08	0.00E+00	9.38E-07	8.93E-06
SQP*	Dimensionless	3.07E+04	3.21E+01	1.31E-01	4.21E-01	0.00E+00	5.39E+02	2.21E+03

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

**Disclaimer: This impact category deals mainly with the eventual impact of low dose ionising radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing adiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Resource use indicators

Results per declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
PERE	MJ	1.46E+03	4.83E-02	1.38E-01	1.68E-01	0.00E+00	7.83E-01	1.20E+03
PERM	MJ	5.97E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	2.06E+03	4.83E-02	1.38E-01	1.68E-01	0.00E+00	7.83E-01	1.20E+03
PENRE	MJ	4.75E+03	4.20E+00	6.18E+01	1.03E+02	0.00E+00	6.84E+01	7.55E+04
PENRM	MJ	3.32E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	3.80E+04	4.20E+00	6.18E+01	1.03E+02	0.00E+00	6.84E+01	7.55E+04
SM	kg	1.00E+03	1.79E-05	1.11E-04	7.67E-05	0.00E+00	1.62E-04	2.42E-01
RSF	MJ	2.91E-01	9.83E-06	2.21E-05	7.06E-06	0.00E+00	1.53E-04	4.45E-02
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	2.80E+00	2.10E-04	1.94E-03	3.46E-03	0.00E+00	5.74E-04	1.69E+01

Waste indicators

Results per declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	2.52E+00	3.87E-03	6.68E-03	3.27E-02	0.00E+00	6.33E-02	1.52E+02
Non-hazardous waste disposed	kg	5.50E+02	2.96E+02	2.25E-01	8.26E-01	0.00E+00	4.96E+03	1.11E+04
Radioactive waste disposed	kg	6.05E-04	2.34E-07	3.16E-06	3.71E-06	0.00E+00	3.52E-06	2.41E-02

Output flow indicators

Results per declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	6.47E-04	1.62E-04	1.58E-06	2.85E-06	0.00E+00	2.71E-03	1.12E-02
Materials for energy recovery	kg	1.12E-04	6.19E-07	8.75E-08	1.18E-07	0.00E+00	1.04E-05	3.54E-03
Exported energy, electricity	MJ	2.55E-01	1.24E-04	1.16E-03	8.74E-04	0.00E+00	1.30E-03	9.37E+00
Exported energy, thermal	MJ	1.90E-01	4.85E-04	4.67E-04	5.34E-04	0.00E+00	8.02E-03	4.71E+00

Other environmental performance indicators

EN 15804:2012+A1 Impact Categories

Results per declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP	kg CO2 eq.	4.19E+02	3.79E+00	4.64E+00	7.63E+00	0.00E+00	8.53E+01	2.89E+03
ODP	kg CFC 11 eq.	6.97E-06	3.72E-09	5.83E-08	8.17E-08	0.00E+00	6.05E-08	6.40E-05
AP	kg SO2 eq.	2.42E+00	2.05E-03	3.07E-02	1.57E-02	0.00E+00	3.35E-02	7.25E+00
EP	kg PO43- eq.	3.56E-01	7.94E-03	7.07E-03	3.15E-03	0.00E+00	8.83E-02	2.26E+00
POCP	kg C2H4 eq.	6.79E-02	8.34E-04	7.86E-04	9.26E-04	0.00E+00	1.55E-02	5.60E-01
ADPE	kg Sb eq.	1.59E-05	1.49E-08	1.96E-07	4.58E-07	0.00E+00	2.07E-07	2.79E-04
ADPF	MJ (NCV)	5.13E+03	4.19E+00	6.16E+01	1.03E+02	0.00E+00	6.82E+01	7.39E+04

Results of the environmental performance indicators – per declared unit: 100% recycling at the end-of-life

Mandatory impact category indicators according to EN 15804:2012+A2:2019/AC:2021

Disclaimer: The use of the results of module A1-A3 without considering the results of module C is discouraged. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Results per declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	4.36E+02	8.42E+01	4.70E+00	7.72E+00	3.77E+02	0.00E+00	0.00E+00
GWP-fossil	kg CO2 eq.	4.20E+02	1.44E+00	4.69E+00	7.72E+00	3.67E+02	0.00E+00	0.00E+00
GWP-biogenic	kg CO2 eq.	1.37E+01	8.28E+01	2.61E-03	2.58E-03	8.33E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO2 eq.	2.50E+00	3.23E-05	1.63E-04	2.26E-04	1.51E+00	0.00E+00	0.00E+00
ODP	kg CFC 11 eq.	9.95E-06	4.70E-09	7.38E-08	1.03E-07	2.84E-07	0.00E+00	0.00E+00
AP	mol H+ eq.	4.40E+00	2.90E-03	4.39E-02	2.10E-02	2.54E+00	0.00E+00	0.00E+00
EP-freshwater	kg P eq.	1.13E-02	4.36E-04	3.83E-05	1.57E-04	4.00E-03	0.00E+00	0.00E+00
EP-marine	kg N eq.	9.35E-01	2.01E-02	2.06E-02	7.64E-03	4.14E-01	0.00E+00	0.00E+00
EP-terrestrial	mol N eq.	1.03E+01	1.38E-02	2.26E-01	8.35E-02	4.18E+00	0.00E+00	0.00E+00
POCP	kg NMVOC eq.	2.86E+00	5.36E-03	6.72E-02	3.12E-02	1.13E+00	0.00E+00	0.00E+00
ADP-minerals & metals*	kg Sb eq.	1.59E-05	1.49E-08	1.96E-07	4.58E-07	7.54E-05	0.00E+00	0.00E+00
ADP-fossil*	MJ	5.17E+03	4.20E+00	6.18E+01	1.03E+02	1.91E+03	0.00E+00	0.00E+00
WDP*	m3	1.29E+02	8.22E-03	8.05E-02	1.45E-01	1.08E+02	0.00E+00	0.00E+00

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

Additional mandatory and voluntary impact category indicators

Results per declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP-GHG[1]	kg CO2 eq.	4.23E+02	4.13E+00	4.70E+00	7.72E+00	3.70E+02	0.00E+00	0.00E+00
PM	Disease incidence	1.97E-05	7.67E-08	1.26E-06	5.15E-07	2.72E-05	0.00E+00	0.00E+00
IRP**	kBq U-235 eq.	2.45E+00	9.81E-04	1.31E-02	1.57E-02	3.95E-01	0.00E+00	0.00E+00
ETPF*	CTUe	4.37E+02	8.49E+00	2.14E+00	6.79E+00	2.32E+02	0.00E+00	0.00E+00
HTPC*	CTUh	2.16E-07	1.40E-10	3.30E-10	6.51E-10	4.09E-08	0.00E+00	0.00E+00
HTPNC*	CTUh	1.16E-06	2.23E-08	4.70E-09	5.11E-08	1.29E-06	0.00E+00	0.00E+00
SQP*	Dimensionless	3.07E+04	3.21E+01	1.31E-01	4.21E-01	1.07E+03	0.00E+00	0.00E+00

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Resource use indicators

Results per declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
PERE	MJ	1.46E+03	4.83E-02	1.38E-01	1.68E-01	8.17E+02	0.00E+00	0.00E+00
PERM	MJ	5.97E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	2.06E+03	4.83E-02	1.38E-01	1.68E-01	8.17E+02	0.00E+00	0.00E+00
PENRE	MJ	4.75E+03	4.20E+00	6.18E+01	1.03E+02	3.69E+04	0.00E+00	0.00E+00
PENRM	MJ	3.32E+04	0.00E+00	0.00E+00	0.00E+00	-3.28E+04	0.00E+00	0.00E+00
PENRT	MJ	3.80E+04	4.20E+00	6.18E+01	1.03E+02	4.08E+03	0.00E+00	0.00E+00
SM	kg	1.00E+03	1.79E-05	1.11E-04	7.67E-05	1.46E-02	0.00E+00	0.00E+00
RSF	MJ	2.91E-01	9.83E-06	2.21E-05	7.06E-06	7.43E-04	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m3	2.80E+00	2.10E-04	1.94E-03	3.46E-03	1.85E+00	0.00E+00	0.00E+00

Waste indicators

Results per declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	2.52E+00	3.87E-03	6.68E-03	3.27E-02	6.99E-01	0.00E+00	0.00E+00
Non-hazardous waste disposed	kg	5.50E+02	2.96E+02	2.25E-01	8.26E-01	9.72E+02	0.00E+00	0.00E+00
Radioactive waste disposed	kg	6.05E-04	2.34E-07	3.16E-06	3.71E-06	9.98E-05	0.00E+00	0.00E+00

Output flow indicators

Results per declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	6.47E-04	1.62E-04	1.58E-06	2.85E-06	7.37E-04	0.00E+00	0.00E+00
Materials for energy recovery	kg	1.12E-04	6.19E-07	8.75E-08	1.18E-07	2.45E-05	0.00E+00	0.00E+00
Exported energy, electricity	MJ	2.55E-01	1.24E-04	1.16E-03	8.74E-04	6.37E-02	0.00E+00	0.00E+00
Exported energy, thermal	MJ	1.90E-01	4.85E-04	4.67E-04	5.34E-04	1.72E-01	0.00E+00	0.00E+00

Other environmental performance indicators

EN 15804:2012+A1 Impact Categories

Results per declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP	kg CO2 eq.	4.19E+02	3.79E+00	4.64E+00	7.63E+00	3.66E+02	0.00E+00	0.00E+00
ODP	kg CFC 11 eq.	6.97E-06	3.72E-09	5.83E-08	8.17E-08	2.30E-07	0.00E+00	0.00E+00
AP	kg SO2 eq.	2.42E+00	2.05E-03	3.07E-02	1.57E-02	5.30E-01	0.00E+00	0.00E+00
EP	kg PO43- eq.	3.56E-01	7.94E-03	7.07E-03	3.15E-03	1.62E-01	0.00E+00	0.00E+00
POCP	kg C2H4 eq.	6.79E-02	8.34E-04	7.86E-04	9.26E-04	1.18E-02	0.00E+00	0.00E+00
ADPE	kg Sb eq.	1.59E-05	1.49E-08	1.96E-07	4.58E-07	7.54E-05	0.00E+00	0.00E+00
ADPF	MJ (NCV)	5.13E+03	4.19E+00	6.16E+01	1.03E+02	4.08E+03	0.00E+00	0.00E+00

Environmental Information Summary

BIAX pods are innovatively crafted entirely from recycled plastic, effectively repurposing waste materials into essential components for the BIAX Foundations™ System. This approach reduces reliance on new raw materials and diverts waste from landfills, aligning with sustainable practices. Fully recyclable, BIAX pods allow for reprocessing and reuse within the manufacturing cycle, effectively eliminating potential waste.

As a proudly Australian-made and owned product, BIAX pods facilitate a clean and efficient construction process. Their design minimises waste generation by eliminating the need for cutting, resulting in an adjustable foundation solution suitable for various applications and contributing to a cleaner construction site.

The stacking and nesting design of BIAX Foundations optimises packaging efficiency, allowing for more units to be transported in a single load. This streamlines logistics and significantly decreases transport emissions associated with delivery.

By integrating high-quality recycled materials, BIAX pods support circular economy principles that prioritise resource efficiency. The production process is designed to minimise waste generation, resulting in less scrap material that could contribute to landfill accumulation, thereby mitigating the overall environmental impact of construction activities.

The lifecycle benefits of BIAX pods extend to their ability to be recycled alongside concrete at the end of their life cycle, fostering sustainable construction practices. This contrasts with traditional EPS void formers, which often lead to materials being discarded and adding to landfill waste.

In summary, the recyclable nature of BIAX pods enables a cleaner and more efficient recycling process for concrete slabs, preventing contamination commonly associated with EPS void formers and further reducing landfill contributions.

BIAX Foundations are manufactured under the ISO 9001:2008 QEC 26671 Quality Endorsed Certification System and the ISO 14001 Environmental Certification System. In addition, we operate in accordance with the Modern Slavery Act 2018.

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