



Statement of Verification

BREG EN EPD No: 000738

Issue: 01

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

Monolith Brick and Stone Ltd (Monolith)

are in accordance with the requirements of:

EN 15804:2012+A2:2019

and

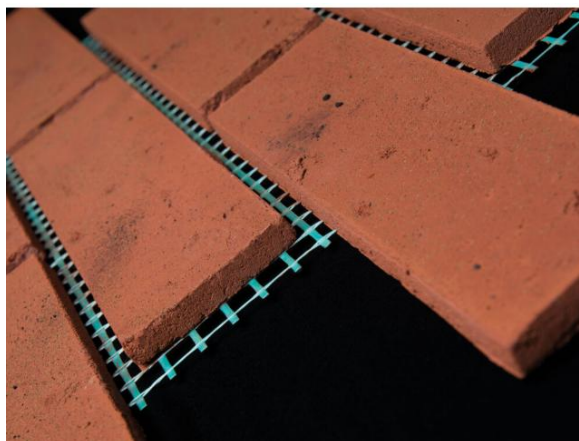
BRE Global Scheme Document SD207

This declaration is for:

1 sq.m of BrickPlus Pro with a worst-case representative weight of 19.78kg

Company Address

Monolith Brick and Stone Ltd (Monolith)
Unit 6b, Phoenix House
Kinmel Parc Industrial Estate
LL18 5TY, United Kingdom



Signed for BRE Global Limited

Hayley Thomson

Operator

06 July 2026

Date of this Issue

06 July 2026

Date of First Issue

05 July 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.

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Environmental Product Declaration

EPD Number: 000738

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
Monolith Brick and Stone Ltd (Monolith) Unit 6b, Phoenix House Kinmel Parc Industrial Estate LL18 5TY, United Kingdom	Lydia Kairl and Mark Eadie of Carbon-Zero (a trading division of Data Engineering Projects Limited) www.carbon-zero.uk Tool: OpenLCA, version 2.2.0
Declared/Functional Unit	Applicability/Coverage
1 sq.m of BrickPlus Pro with a worst-case representative weight of 19.78kg	Manufacturer-specific product.
EPD Type	Background database
Cradle to Gate with Module C and D	Ecoinvent v3.10
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: Jiacheng (Francis) Yu	
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)

Monolith Brick and Stone Ltd

Unit 6b
Phoenix House
Kinmel Parc Industrial Estate
LL18 5TY
United Kingdom

Construction Product:

Product Description

BrickPlus Pro is a lightweight castellated panel of 12 brick slips, integrated into an A1 non-combustible mesh. Mesh webbing is fused into the brick slip and can be used for application internally or externally. BrickPlus Pro can be directly applied to insulation, external leaves and render boards, therefore reducing the build-up.

The declared unit is 1 sq.m of BrickPlus Pro with a worst-case representative weight of 19.78kg.

This EPD applies to the BrickPlus Pro brick slip product range (5 colour variations) manufactured in Wales. This LCA is based on a representative 'worst case' BrickPlus Pro product, as the different colour variations of the product require slightly different levels of raw materials to achieve colour variation. The table below summarises the different percentage ratio between the raw products mesh, render, pigment and sand for the 5 different variants of BrickPlus Pro.

BrickPlus Pro Products	Mesh	Render	Pigment	Sand	Packaging
PR03 - m ² Grey Wolf - Pro Mesh Panels	0.50	16.67	0.00	0.13	0.37
PR06 - m ² Imperial 262 - Pro Mesh Panels	0.50	16.94	0.74	1.60	0.37
PR04 - m ² Brixton Multi v3 - Pro Mesh Panels	0.10	16.67	0.22	0.10	0.37
PR04 - m ² Kingston Multi v2 - Pro Mesh Panels	0.50	16.74	0.33	0.17	0.37
PR01 - m ² Yellow Brick - Pro Mesh Panels	0.50	16.67	0.47	0.00	0.37
Average Content	0.42	16.73	0.35	0.40	0.37



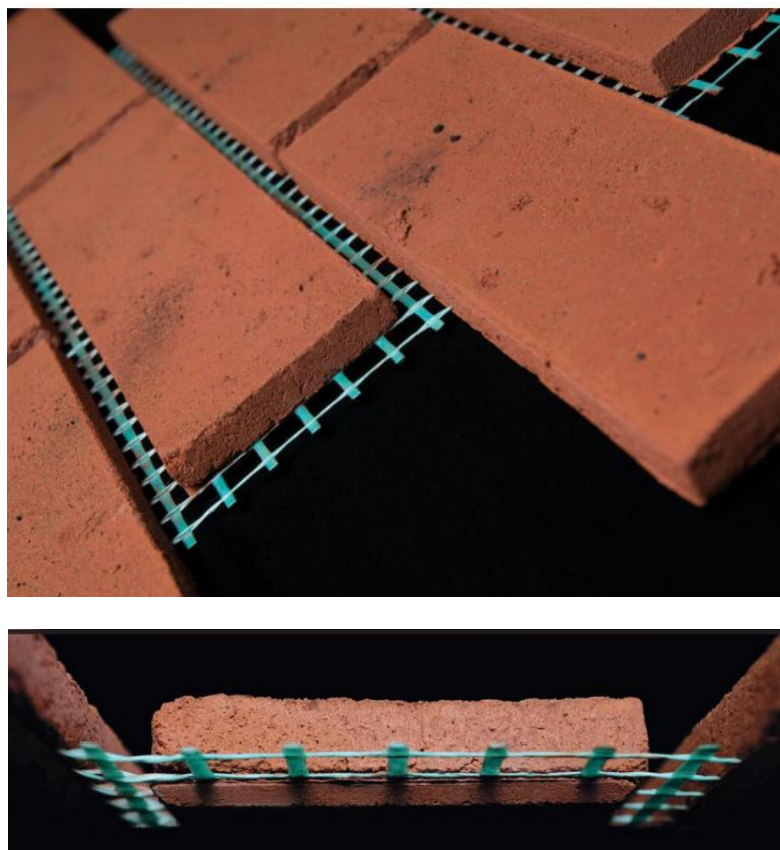
The LCA was carried out on the blend deemed to be the worst-case scenario from an emissions and impact perspective – the Imperial 262 mix. All weights applied in this EPD relate to the Imperial 262 mix as a representative product. This is deemed the worst-case scenario based on the level of pigments required to achieve the finish of this mix compared to the other 4 mixes.

Hence, this EPD is developed to use the worst-case scenario to represent all 5 colours of BrickPlus Pro brick slip product based on the Imperial 262 mix as the representative product. All technical characteristics and properties for any product could be found on the website: <https://brickplus.co.uk/brickplus-pro/>

Technical Information

Property	Value, Unit
Product Weight	19.78 kg per sq.m
Thickness	13-19mm
Reaction to Fire Classification:	A1, A1 _{FL} , A1 _L
Dry Density:	1800kg-m ³
Compressive Peak Stress (after 24hrs):	2.5 MPa
Flexural Peak Stress (after 24hrs):	1.05 MPa
Capillarity (after 24hrs):	0.26 kg-m ²
Freeze / Thaw Resistance:	10 weeks, 100 sub-cycles of: 45 mins. Heat radiation @65°C Followed by 15 mins of Water cooling @ 15°C 1 period of freezing 64 Hours @-20°C
Bond Strength (using Monolith approved Adhesive):	Bonded to EPS Insulation: 115 kN-m ² Bonded to Masonry: 174 kN-m ²
Tolerance Category:	All bricks are hand finished, therefore allow for slight variances in size, texture and colour. British Standards tolerance BS EN 771-1 T1, or whichever is greater as shown below:
Size – Metric / (Imperial)	215 / (225) 65 / (73) 13 / (13)
Additional Testing	BS8414 Fire Tested
Reference service life	30 years according to BBA Agrément Certificate 18/5604

Note: All technical characteristics and properties are extracted from the product technical dataset. For more information, please contact Monolith Brick and Stone Ltd or visit the website: <https://brickplus.co.uk/brickplus-pro/>



Main Product Contents

Material/Chemical Input	%
Brick Render	85.6%
Fibreglass Mesh	2.5%
Sands	8.1%
Pigments	3.7%

Product Components	Biogenic material, kg C/sq.m
Brick Render	0
Fibreglass Mesh	0
Sands	0
Pigments	0
Packaging Materials	Biogenic material, kg C/sq.m
Plastic Wrap	0
Paper	<0.01 (Negligible)
EPS	0
Misc	0

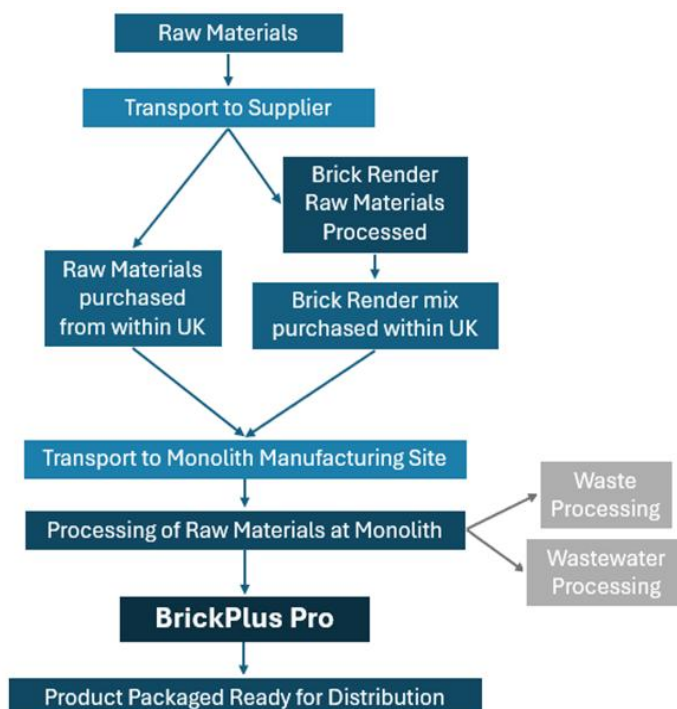
Manufacturing Process

Raw Materials (Brick Render, Sands, Pigments) that have been transported to the site are prepared and combined.

The prepared formula is poured into moulds (with aid of mould release agents), brick texture is stamped into the surface and the product is air dried and fused with mesh backing.

Once the product is dry it is inspected for quality. If quality requirements are not met the subpar product is repurposed or included in the waste stream. If the product meets the quality standards it is packaged on site ready for distribution.

Process flow diagram



Construction Installation

BrickPlus Pro is fitted using a strong cement-based adhesive. At height, BrickPlus Pro may also be fitted with a combination of mechanical fixings and adhesive.

Use Information

The composition of the product does not change during use.

Brick slip 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 product itself.

End of Life

BrickPlus Pro panels are not reused at end of life.



Scenario Default Values have been applied based on the BRE PCR default End of Life scenarios for *Cladding panel, cement (glass reinforced)* as no specific proof of End-of-Life scenario can be provided. As such it has been assumed that at end of life: 90% of BrickPlus Pro is recycled and 10% is landfilled.

The waste BrickPlus Pro brick slip that is recycled at End of Life will be re-used to make gravel aggregate on building sites, avoiding the use of virgin raw materials.

Life Cycle Assessment Calculation Rules

Declared / Functional unit description

The declared unit is 1 sq.m of BrickPlus Pro with a worst-case representative weight of 19.78kg.

The product is packaged ready for distribution.

System boundary

The system boundary of the EPD is a cradle to gate and thus covers all modules from A1 to A3, plus C1 to C4 and includes module D in accordance with EN 15804:2012+A2:2019 and BRE 2023 Product Category Rules (PN 514 Rev 3.2).

Geographical Scope: United Kingdom

Data collected from one production site: Unit 6b, Phoenix House, Kinmel Parc Industrial Estate, LL18 5TY, United Kingdom

Data sources, quality and allocation

Manufacturing data from the period 01 April 2023 to 31 March 2024 has been provided by Monolith.

Allocation and data cut-off rules applied to this LCA followed requirements set by EN15804 +A2.

Monolith produces two products at their single site, BrickPlus Pro and BrickPlus Eco. Allocation between the two site products has been applied based on physical allocation, with distribution of products based on sq.m produced. All processes associated with the manufacturing process have been included.

Total business usage of resources has been provided for the manufacturing location, so allocation has been assumed as approximately:

- 76% BrickPlus Pro
- 24% BrickPlus Eco

This aligns with the business production for the 01 April 2023 to 31 March 2024 time period with a total of 6,200 sq.m and circa 4,700 sq.m being for BrickPlus Pro and 1,500 sq.m for BrickPlus Eco.

All inputs or outputs have been included and all raw materials, packaging and transport, energy, water use and wastes, are included, except for direct emissions to air, water and soil, which are not measured. The difference between input and output materials resulted in a mass balance of 96%, within a 5% tolerance.

Upstream extraction and/or processing of inputs are included within the use of the background datasets within Ecolnvent v3.10 (OpenLCA).

The electricity from grid provided in the UK is the source of electricity for manufacturing which has the climate impact of 0.441 kg CO₂e/ kWh (Ecolnvent v3.10)*. The natural gas provided in the UK used for manufacturing site heating has the climate impact of 0.0761 kg CO₂e/MJ (Ecolnvent v3.10).

* It is noted that this is considered a conservative emissions factor for UK electricity, and thus may be an overestimation of emissions associated with electricity use.



The study does not exclude any hazardous or toxic materials or substances where the cut-off rules do not apply.

The LCA specifies worker activities, machines, buildings as well as production of incoming supplier packaging.

Inventory data quality is judged by geographical, temporal, and technological representativeness. To cover these requirements and to ensure reliable results, first-hand industry data crossed with LCA background datasets were used. The data was collected from internal records and reporting documents from Monolith. After evaluating the inventory, according to the defined ranking in the LCA report, the assessment reflects fair inventory data quality.

Cut-off criteria

Allocation and data cut-off rules applied to this LCA followed requirements set by EN15804 +A2.

LCA Results

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

Parameters describing environmental impacts			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO ₂ eq	kg CO ₂ eq	kg CO ₂ eq	kg CO ₂ eq	kg CFC11 eq	mol H ⁺ eq	kg (PO ₄) ³⁻ eq
Product stage	Raw material supply	A1	1.20E+01	1.20E+01	6.03E-02	4.49E-03	9.02E-08	4.88E-02	1.80E-03
	Transport	A2	3.60E-01	3.60E-01	1.10E-04	1.40E-04	6.69E-09	3.74E-03	2.12E-05
	Manufacturing	A3	1.46E+01	1.44E+01	-1.53E-01	3.52E-01	4.42E-07	3.83E-02	7.15E-03
	Total (Consumption grid)	A1-3	2.69E+01	2.67E+01	-9.30E-02	3.56E-01	5.39E-07	9.09E-02	8.97E-03
Construction process stage	Transport	A4	MND	MND	MND	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND	MND	MND
90% recycled 10% landfilled scenario									
End of life	Deconstruction, demolition	C1	9.00E-02	9.00E-02	9.42E-06	7.48E-06	1.32E-09	7.80E-04	2.52E-06
	Transport	C2	4.24E+00	4.23E+00	2.47E-03	2.05E-03	6.31E-08	1.98E-02	5.70E-04
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	4.35E+00	4.35E+00	2.50E-03	2.09E-03	6.50E-08	2.07E-02	5.80E-04
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-3.30E-01	-3.30E-01	-4.20E-04	-2.40E-04	-3.60E-09	-2.05E-03	-7.30E-05

GWP-total = Global warming potential, total;
 GWP-fossil = Global warming potential, fossil;
 GWP-biogenic = Global warming potential, biogenic;
 GWP-luluc = Global warming potential, land use and land use change;

ODP = Depletion potential of the stratospheric ozone layer;
 AP = Acidification potential, accumulated exceedance; and
 EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment

LCA Results (continued)

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

Parameters describing environmental impacts			EP-marine	EP-terrestrial	POCP	ADP-mineral&metals	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	1.18E-02	9.81E-02	3.15E-02	6.83E-05	1.25E+02	6.31E+00	5.06E-07
	Transport	A2	1.01E-03	1.11E-02	3.55E-03	8.45E-07	5.00E+00	2.25E-02	2.90E-08
	Manufacturing	A3	9.82E-03	7.82E-02	4.04E-02	7.23E-05	2.36E+02	3.36E+00	3.56E-07
	Total (Consumption grid)	A1-3	2.27E-02	1.87E-01	7.54E-02	1.42E-04	3.66E+02	9.69E+00	8.91E-07
Construction process stage	Transport	A4	MND	MND	MND	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND	MND	MND
90% recycled 10% landfilled scenario									
End of life	Deconstruction, demolition	C1	3.60E-04	3.95E-03	1.18E-03	3.16E-08	1.13E+00	2.76E-03	2.21E-08
	Transport	C2	6.40E-03	7.03E-02	2.70E-02	3.35E-05	5.81E+01	3.67E-01	4.18E-07
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	6.77E-03	7.43E-02	2.83E-02	3.39E-05	5.98E+01	3.74E-01	5.73E-07
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-5.70E-04	-6.58E-03	-2.01E-03	-1.58E-06	-4.29E+00	-2.80E-01	-3.08E-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 (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	4.68E-01	3.51E+01	2.01E-08	6.99E-08	3.05E+01
	Transport	A2	5.26E-03	1.11E+00	2.04E-09	2.83E-09	3.88E+00
	Manufacturing	A3	2.44E+00	7.82E+01	3.84E-08	7.46E-08	4.56E+01
	Total (Consumption grid)	A1-3	2.92E+00	1.14E+02	6.06E-08	1.47E-07	8.00E+01
Construction process stage	Transport	A4	MND	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND
90% recycled 10% landfilled scenario							
End of life	Deconstruction, demolition	C1	5.00E-04	1.60E-01	3.37E-10	1.54E-10	8.00E-02
	Transport	C2	1.05E-01	1.55E+01	2.39E-08	3.71E-08	2.38E+01
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	1.07E-01	1.59E+01	2.44E-08	3.76E-08	2.47E+01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-2.04E-02	-1.57E+00	-2.51E-09	-2.86E-09	-3.31E+00

IRP = Potential human exposure efficiency relative to U235;
ETP-fw = Potential comparative toxic unit for ecosystems;
HTP-c = Potential comparative toxic unit for humans;

HTP-nc = Potential comparative toxic unit for humans; and
SQP = Potential soil quality index.

LCA Results (continued)

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

Parameters describing resource use, primary energy			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	6.90E+00	0.00E+00	6.90E+00	1.22E+02	3.41E+00	1.25E+02
	Transport	A2	7.00E-02	0.00E+00	7.00E-02	4.53E+00	4.70E-01	5.00E+00
	Manufacturing	A3	1.32E+01	0.00E+00	1.32E+01	2.22E+02	1.39E+01	2.36E+02
	Total (Consumption grid)	A1-3	2.02E+01	0.00E+00	2.02E+01	3.49E+02	1.78E+01	3.66E+02
Construction process stage	Transport	A4	MND	MND	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND	MND
90% recycled 10% landfilled scenario								
End of life	Deconstruction, demolition	C1	1.00E-02	0.00E+00	1.00E-02	1.02E+00	1.10E-01	1.13E+00
	Transport	C2	1.51E+00	0.00E+00	1.51E+00	5.30E+01	5.10E+00	5.81E+01
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	1.53E+00	0.00E+00	1.53E+00	5.46E+01	5.26E+00	5.99E+01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-2.60E-01	0.00E+00	-2.60E-01	-4.03E+00	-2.70E-01	-4.29E+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 (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	6.31E-01	9.50E-02	0.00E+00	1.64E-01
	Transport	A2	5.00E-03	1.00E-03	0.00E+00	1.00E-03
	Manufacturing	A3	1.89E-01	6.80E-02	0.00E+00	1.23E-01
	Total (Consumption grid)	A1-3	8.25E-01	1.64E-01	0.00E+00	2.88E-01
Construction process stage	Transport	A4	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND
90% recycled 10% landfilled scenario						
End of life	Deconstruction, demolition	C1	1.00E-03	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	7.10E-02	1.90E-02	0.00E+00	1.00E-02
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	7.20E-02	1.90E-02	0.00E+00	1.00E-02
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-9.00E-03	-3.00E-03	0.00E+00	-7.00E-03

SM = Use of secondary material;
RSF = Use of renewable secondary fuels;

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

LCA Results (continued)

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

Other environmental information describing waste categories					
			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	3.00E-01	2.35E+00	1.20E-04
	Transport	A2	1.00E-02	5.00E-02	1.30E-06
	Manufacturing	A3	2.60E-01	1.48E+01	5.30E-04
	Total (Consumption grid)	A1-3	5.60E-01	1.72E+01	6.51E-04
Construction process stage	Transport	A4	MND	MND	MND
	Construction	A5	MND	MND	MND
Use stage	Use	B1	MND	MND	MND
	Maintenance	B2	MND	MND	MND
	Repair	B3	MND	MND	MND
	Replacement	B4	MND	MND	MND
	Refurbishment	B5	MND	MND	MND
	Operational energy use	B6	MND	MND	MND
	Operational water use	B7	MND	MND	MND
90% recycled 10% landfilled scenario					
End of life	Deconstruction, demolition	C1	1.00E-03	7.00E-03	1.24E-07
	Transport	C2	1.08E-01	7.42E-01	2.62E-05
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	1.10E-01	7.58E-01	2.66E-05
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.30E-02	-7.80E-02	-5.00E-06

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



LCA Results (continued)

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

Other environmental information describing output flows – at end of life								
			CRU	MFR	MER	EE	Biogenic carbon (product)	Biogenic carbon (packaging)
			kg	kg	kg	MJ per energy carrier	kg C	kg C
Product stage	Raw material supply	A1	0.00E+00	1.78E-01	4.28E-05	5.70E-02	0.00E+00	0.00E+00
	Transport	A2	0.00E+00	4.00E-03	4.99E-07	1.00E-03	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	2.22E-01	3.04E-05	1.29E+00	0.00E+00	0.00E+00
	Total (Consumption grid)	A1-3	0.00E+00	4.04E-01	7.38E-05	1.35E+00	0.00E+00	0.00E+00
Construction process stage	Transport	A4	MND	MND	MND	MND	MND	MND
	Construction	A5	MND	MND	MND	MND	MND	MND
Use stage	Use	B1	MND	MND	MND	MND	MND	MND
	Maintenance	B2	MND	MND	MND	MND	MND	MND
	Repair	B3	MND	MND	MND	MND	MND	MND
	Replacement	B4	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MND	MND	MND	MND	MND	MND
	Operational energy use	B6	MND	MND	MND	MND	MND	MND
	Operational water use	B7	MND	MND	MND	MND	MND	MND
90% recycled 10% landfilled scenario								
End of life	Deconstruction, demolition	C1	0.00E+00	5.50E-04	3.54E-08	5.03E-05	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	5.60E-02	8.36E-06	1.20E-02	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	5.70E-02	8.48E-06	1.20E-02	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	-7.00E-03	-1.20E-06	-2.00E-03	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
Reference service life	30 years according to BBA Agrément Certificate 18/5604		
C1 to C4 End of life,	The end-of-life scenario for BrickPlus Pro has been developed based on BRE PCR End of Life Default Scenarios. The default End of Life scenarios for Cladding panel, cement (glass reinforced) has been applied as the closest default scenario as no specific proof of End-of-Life scenario can be provided by the manufacturer at this stage (no product has reached End of Life). Based on the default end of life scenario it has been assumed that at end of life: 90% of BrickPlus Pro is recycled and 10% is landfilled. It is assumed that the waste BrickPlus Pro brick slip that is recycled at End of Life will be re-used to make gravel aggregate on building sites, avoiding the use of virgin raw materials. BrickPlus Pro is assumed to be deconstructed as part of a building demolition/deconstruction. Demolition primarily uses energy for mechanical dismantling.		
	Demolition/dismantling – energy consumption of diesel in building machine	0.0437	MJ per kg
	Transport to waste processing by Truck – Distance (Average light commercial vehicle assumed)	100	km
	No waste processing for reuse, recovery and recycling was assumed	N/A	/
	Waste for final disposal - Unrecoverable assumed sent to landfill	10	%
	Waste for final disposal – Recoverable sent to recycling	90	%
Module D	BrickPlus Pro does not include secondary materials. It is assumed that the waste BrickPlus Pro brick slip that is recycled at End of Life will be re-used to make gravel aggregate on building sites, avoiding the use of virgin raw materials.		

Summary, comments and additional information

Interpretation

The interpretation of the results has been carried out considering the methodology- and data-related assumptions and limitations declared in the EPD. This interpretation section focuses on the environmental impact categories as well as the primary energy demand indicators only.

The majority of the environmental impact stems from the production stage (A1-A3), accounting for 26.93 kg CO₂e of the total 35.6 kgCO₂e (76% of the total GWP). Of the production stage the majority of GWP is associated with the manufacturing stage A3 (54% of A1-A3), with the majority of the remainder associated with raw materials (45% of A1-A3).

The figure above illustrates that the production stage (A1-A3) contributed the highest to the total energy consumption, a total of 87% of renewable primary energy resources and 75% of non-renewable primary energy sources.

The figure above illustrates that the production stage contributed the highest to the total water consumption, a total of 0.29 cubic metres. The total use of water consumption mainly derives from the manufacturing site's water use (as part of A1-A3).



Figure 1 BrickPlus Pro Lifecycle Assessment Results for 1sq.m product



End User Table

The LCA results in the EPD are for 1 sq.m of Imperial 262 BrickPlus Pro with a worst-case representative weight of 19.78kg. This is deemed the worst-case scenario based on the level of pigments required to achieve the finish of this mix compared to the other 4 mixes.

The environmental impacts of other mixes in the BrickPlus Pro range can be obtained from multiplying the results in this EPD by the conversion factors below.

(For example, to calculate the environment impacts of Brixton Multi v3 BrickPlus Pro, EPD users need to multiply the conversion factor 0.0.86 by the LCA results within this report.)

BrickPlus Pro Products	Product Weight (kg/sq.m)	Conversion Factors
PR06 - m ² Imperial 262 - Pro Mesh Panels	19.78	1.0
PR03 - m ² Grey Wolf - Pro Mesh Panels	17.29	0.87
PR04 - m ² Brixton Multi v3 - Pro Mesh Panels	17.08	0.86
PR04 - m ² Kingston Multi v2 - Pro Mesh Panels	17.73	0.90
PR01 - m ² Yellow Brick - Pro Mesh Panels	17.64	0.89



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.

BRE Global Product Category Rules (PCR) For Type III EPD of Construction Products to EN 15804+A2 PN 514 Rev 3.2

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