Statement of Verification

BREG EN EPD No.: 000675 Issue 01

This is to verify that the

Environmental Product Declaration

provided by:

Holcim UK Limited

is in accordance with the requirements of:

EN 15804:2012+A2:2019

and

BRE Global Scheme Document SD207

This declaration is for:
1 tonne of Granite aggregate

Company Address

Holcim UK Limited,
Bardon Hill,
Leicestershire,
England,
LE67 1TL

Signed for BRE Global Ltd	Emma Baker Scheme Operator	10 April 2025 Date of this Issue
10 April 2025 Date of First Issue		09 April 2030 Expiry Date

Environmental Product Declaration

EPD Number: 000675

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE 2023 Product Category Rules (PN 514 Rev 3.1) for Type III environmental product declaration of construction products to EN 15804:2012 + A2:2019.
Commissioner of LCA study	**LCA consultant/Tool**
Holcim UK Limited, Bardon Hill, Leicestershire, England, LE67 1TL	LCA consultant: Chi Zhang/Bala Subramanian Tool: BRE LINA A2
Declared/Functional Unit	**Applicability/Coverage**
1 tonne of Granite aggregate	Product Specific.
EPD Type	**Background database**
Cradle to Gate with Module C and D	Ecoinvent 3.8

Demonstration of Verification
CEN standard EN 15804 serves as the core PCR [a]
Independent verification of the declaration and data according to EN ISO 14025:2010 ☐Internal ☒ External
(Where appropriate [b]) Third party verifier: Flavie Lowres
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)

The Glensanda Quarry, located just 500 meters from the factory

Glensanda Quarry,
Rhugh Garby,
Barcaldine,
Argyll,
PA37 1SE

Construction Product:

Product Description

The granite aggregates are produced from a naturally occurring igneous rock body through blasting, crushing, and screening to create various aggregate sizes, ranging from 200mm gabion stone to 0-2mm crushed rock fines. They can be used in bound applications such as concrete production, asphalt pavement, precast concrete products, and mortar, as well as unbound applications such as road base and sub-base layers, railway ballast, and unpaved roads and pathways. The LCA analysis assesses the extraction and processing of raw granite into granite aggregates. This EPD covers 1 tonne of Granite aggregate from Glensanda Quarry, including all stages of the processes required to obtain the aggregates.

Technical Information

The test results listed below correspond to typical aggregate sizes. For further details, please contact the Aggregate Industries technical team:

Property	Test Standard	Coarse Aggregate	Fine Aggregate
Aggregate Size	-	Various	0/5 mm
Aggregate Type	-	Crushed	Crushed Rock Fines
Aggregate Colour	-	Pink / Grey	Pink / Grey
Apparent Relative Density	BS EN 1097-6	2.66 Mg/m^3	2.64 Mg/m^3
S.S.D. Relative Density	BS EN 1097-6	2.63 Mg/m^3	2.63 Mg/m^3
Oven Dry Relative Density	BS EN 1097-6	2.61 Mg/m^3	2.63 Mg/m^3

Property	Test Standard	Coarse Aggregate	Fine Aggregate
Water Absorption (%)	BS EN 1097-6	0.6%	0.2%
Aggregate Abrasion Value	BS EN 1097-8	3.8	-
Water Soluble Chloride salt Content	BS EN 1744-1	<0.001	<0.001
Acid Soluble Sulfate Content SO3	BS EN 1744-1	<0.1	<0.1
Total Sulphur Content	BS EN 1744-1	<0.1	<0.1
Micro Deval Coefficient	BS EN 1097-1	7	-
Los Angles Coefficient	BS EN 1097-2	25	-
Drying Shrinkage	BS EN 1367-4	0.026%	-
Petrographical Examination	BS EN 932-3: 1997	-	-
Alkaline Silica Reaction - ASR	ASTM 1260-14	0.04	-
Magnesium Sulphate Soundness Value	BS EN 1367-2	1	1
Resistance to Thermal Shock	BS EN 1367-5	13.2	-
Polished Stone Value	BS EN 1097-8	56	-
Affinity to Bituminous Binders	prEN 12697-11:2000	0%	-
Ten Percent Fines Value (Soaked)	BS 812 Pt 111	190KN	-
Calcium Carbonate Content	BS EN 196-21: 1993	-	2.45%
Carbon Dioxide Content	BS EN 196-21: 1994	-	1.1%
Drying Shrinkage	BS EN 1367-4	-	0.026%
Methylene Blue (MB) Value	BS EN 933-9	-	1.0
Humus Content	BS EN 1744-1	-	Negative

Main Product Contents

Material/Chemical Input	%
Granite aggregate	100

Manufacturing Process

The current EPD covers the following operations of coarse and fine granite aggregates at the Glensanda Quarry:

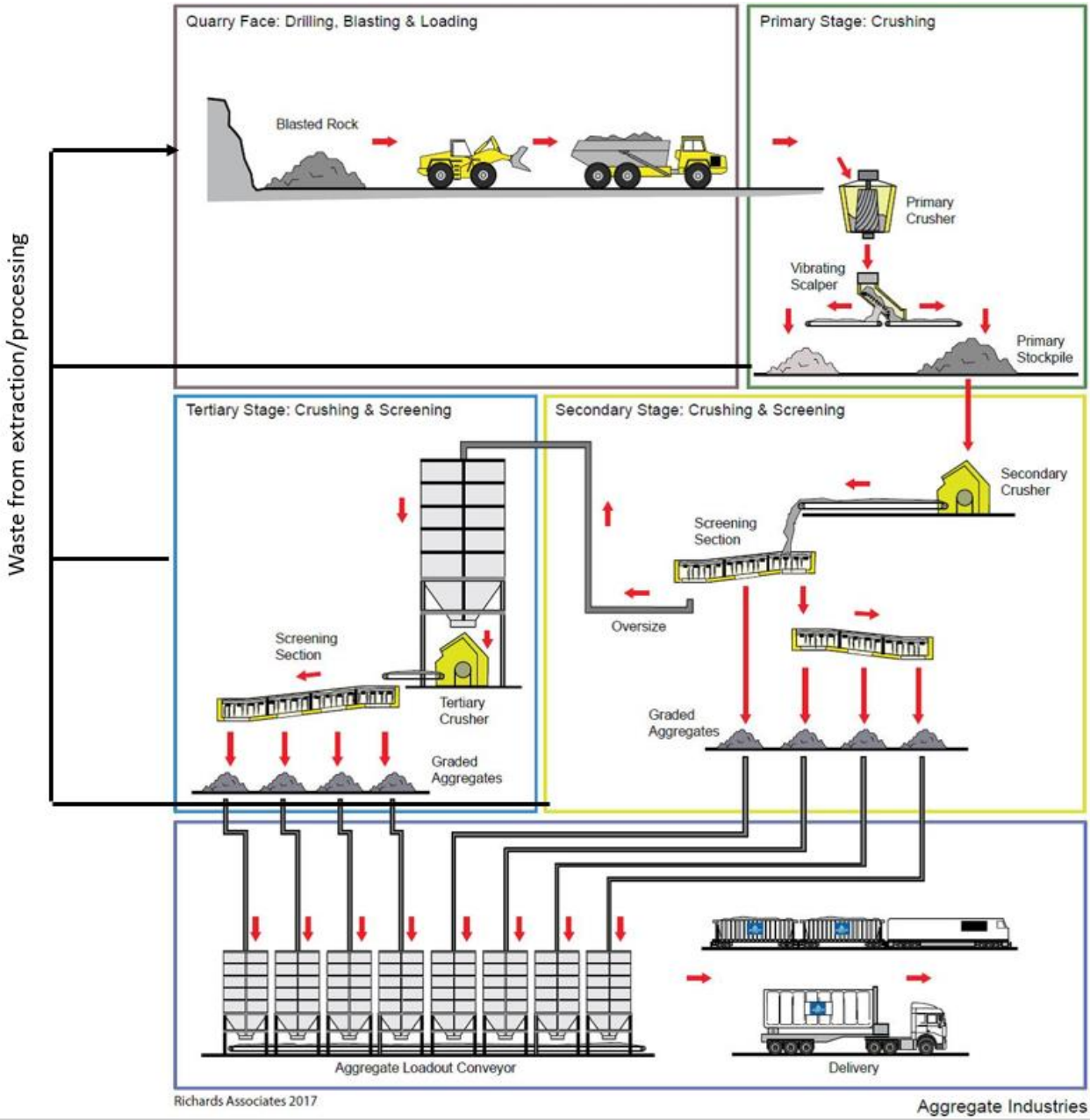
1. Quarrying and Primary Crushing
   The igneous rock mass is drilled and then explosives are used to release several thousand tonnes of rock at a time. This rock which ranges in size from 2.5 meters to 0.5mm is loaded in to dump trucks and transported to a primary crusher to reduce larger pieces to 300 mm. The crushed material is subsequently stored in a primary stockpile.

2. Secondary Crushing and Screening
   The material from the primary stockpile is fed into the secondary crusher for further size reduction. It then passes through a screening section to separate different size fractions, with oversized material being sent back for additional crushing.

3. Tertiary Crushing and Final Screening
   In the tertiary stage, the material undergoes final crushing in the tertiary crusher. It is then screened again to produce graded aggregates of various sizes. This additional screening step for smaller aggregates requires slightly more energy consumption.

4. Storage and Delivery
   The graded aggregates are transported via loadout conveyors to storage bins. The finished products are then loaded onto trucks and trains for delivery to customers. This process ensures high-quality, consistent aggregates suitable for various construction applications.

Process flow diagram



End of Life

Granite aggregate is used in bound and unbound applications. In this study, it is assumed that the granite aggregate is used in the bound applications such as concrete products which is sent to the waste processing facility after the demolition.

Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1 tonne of Granite aggregate

System boundary

This is a cradle-to-gate with module C and D, LCA study that follows the modular design defined in EN15804:2012 + A2:2109, and the Life Cycle Assessment study has been performed in accordance with the requirements of BRE 2023 Product Category Rules (PN 514 Rev 3.1).

Data sources, quality, and allocation

Specific primary data derived from the Aggregate Industries UK Ltd production process in the Glensanda Quarry, in Oban (UK), have been modelled using LINA A2 software for the period (01/01/2022 to 31/12/2022). In accordance with the requirements of EN15804:2012 + A2:2019, the most current available data has been used. Secondary data has been obtained for all remaining upstream and downstream processes that are beyond the control of the manufacturer from the ecoinvent 3.8 database. All ecoinvent datasets are complete within the context used and conform to the system boundary and the criteria for the exclusion of inputs and outputs, according to the requirements specified in EN15804+A2:2019. 100% of the data has been allocated to the product. Site-wide values for energy and water have been derived from utility bills. Figures for raw and ancillary materials are based on actual usage.

Quality Level Geographical - Specific UK datasets have been selected from the ecoinvent LCI for this LCA. The quality of the geographical representativeness is therefore very good.

Technical Representativeness - Data from processes and products are under study. Same state of technology applied as defined in goal and scope (i.e. identical technology). Technical representativeness is therefore good.

Time Representativeness - There are less than 5 years between the ecoinvent LCI reference year and the time period for which LCA was undertaken. The quality level of time representativeness is Good as the background LCI datasets are based on the ecoinvent LCI reference year and the time period for which the LCA was undertaken.

It is important to note that the LCA analysis uses electricity data from the GB National Grid, a detail that is integral to the system boundary of this assessment. This inclusion ensures that the environmental impacts associated with the use of electricity are accurately represented throughout the life cycle stages. According to Ecoinvent 3.8, the emissions factor for electricity generated from the UK grid (2022) is 0.239 kgCO_2eq./kWh.

Cut-off criteria

This study includes the quarrying and manufacturing of granite aggregates which includes A1-A3, and the end-of-life scenarios of this product (module C and D) but excludes emission to air, water, and soil and no packaging included in the LCA analysis. In the production process of granite aggregates, ancillary materials such as conveyor belts, screens, explosives, and maintenance materials for lorries may be required. In the LCA analysis, the explosive used during quarrying activities are included. However, the quantities of other potential ancillary materials have been excluded from the LCA analysis. During the quarrying and production process, any granite wastages (overburden) are put back into quarry. It is hard to measure the quantity of overburden put back to the quarry site, however in the LCA analysis it is typically assumed that 1% of the output has been considered in the analysis.

LCA Results

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

Parameters describing environmental impacts									
			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO_2 eq	kg CO_2 eq	kg CO_2 eq	kg CO_2 eq	kg CFC11 eq	mol H^+ eq	kg $(PO_4)^{3-}$ eq
Product stage	Raw material supply	A1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	8.84E-02	8.83E-02	7.52E-05	3.47E-05	2.04E-08	3.58E-04	5.69E-06
	Manufacturing	A3	3.21E+00	3.17E+00	3.81E-02	1.12E-03	5.38E-07	2.34E-02	3.03E-04
	Total (of product stage)	A1-3	3.30E+00	3.26E+00	3.81E-02	1.16E-03	5.58E-07	2.37E-02	3.08E-04
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+00	8.31E+00	7.08E-03	3.26E-03	1.92E-06	3.37E-02	5.35E-04
	Waste processing	C3	3.82E+00	3.82E+00	1.35E-03	3.81E-04	8.16E-07	3.97E-02	1.18E-04
	Disposal	C4	2.64E-01	2.63E-01	2.61E-04	2.49E-04	1.07E-07	2.48E-03	2.41E-05
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-8.00E+00	-7.88E+00	-1.02E-01	-1.11E-02	-6.36E-07	-5.07E-02	-4.29E-03

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

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

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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	1.08E-04	1.18E-03	3.61E-04	3.07E-07	1.33E+00	6.01E-03	7.62E-09
	Manufacturing	A3	9.46E-03	1.07E-01	2.82E-02	1.03E-05	4.98E+01	4.31E-01	5.52E-07
	Total (of product stage)	A1-3	9.57E-03	1.08E-01	2.85E-02	1.06E-05	5.11E+01	4.37E-01	5.59E-07
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-02	1.11E-01	3.40E-02	2.89E-05	1.26E+02	5.65E-01	7.17E-07
	Waste processing	C3	1.76E-02	1.92E-01	5.29E-02	1.96E-06	5.24E+01	1.21E-01	8.13E-06
	Disposal	C4	8.61E-04	9.42E-03	2.74E-03	6.01E-07	7.35E+00	3.37E-01	4.99E-08
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.17E-02	-1.41E-01	-3.63E-02	-7.45E-05	-1.16E+02	-1.52E+01	-6.41E-07

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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	6.86E-03	1.04E+00	3.37E-11	1.09E-09	9.17E-01
	Manufacturing	A3	7.13E-01	3.29E+01	1.20E-09	2.19E-08	1.71E+01
	Total (of product stage)	A1-3	7.20E-01	3.40E+01	1.24E-09	2.30E-08	1.80E+01
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	6.46E-01	9.81E+01	3.18E-09	1.03E-07	8.63E+01
	Waste processing	C3	2.36E-01	3.06E+01	1.19E-09	2.22E-08	6.67E+00
	Disposal	C4	3.27E-02	4.64E+00	1.18E-10	3.05E-09	1.54E+01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.80E+00	-1.34E+02	-7.81E-09	-1.41E-07	-1.07E+02

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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	1.88E-02	0.00E+00	1.88E-02	1.31E+00	0.00E+00	1.31E+00
	Manufacturing	A3	4.22E+00	2.70E-01	4.49E+00	5.23E+01	2.39E+00	5.47E+01
	Total (of product stage)	A1-3	4.24E+00	2.70E-01	4.51E+00	5.36E+01	2.39E+00	5.60E+01
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	1.77E+00	0.00E+00	1.77E+00	1.23E+02	0.00E+00	1.23E+02
	Waste processing	C3	2.93E-01	0.00E+00	2.93E-01	5.14E+01	0.00E+00	5.14E+01
	Disposal	C4	6.27E-02	0.00E+00	6.27E-02	7.22E+00	0.00E+00	7.22E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.09E+01	0.00E+00	-1.09E+01	-1.16E+02	0.00E+00	-1.16E+02

PERE = Use of renewable primary energy excluding renewable primary energy used as raw materials;
PERM = Use of renewable primary energy resources used as raw materials;
PERT = Total use of renewable primary energy resources;

PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials;
PENRM = Use of non-renewable primary energy resources used as raw materials;
PENRT = Total use of non-renewable primary energy resource

LCA Results (continued)

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	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	1.49E-04
	Manufacturing	A3	1.16E-02	1.50E-05	0.00E+00	1.31E-02
	Total (of product stage)	A1-3	1.16E-02	1.50E-05	0.00E+00	1.32E-02
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	1.40E-02
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	2.99E-03
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	7.88E-03
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	-3.58E-01

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)

Other environmental information describing waste categories					
			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	0.00E+00	0.00E+00	0.00E+00
	Transport	A2	1.47E-03	2.61E-02	9.03E-06
	Manufacturing	A3	2.53E-01	1.10E+01	3.48E-04
	Total (of product stage)	A1-3	2.55E-01	1.10E+01	3.57E-04
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	1.39E-01	2.46E+00	8.50E-04
	Waste processing	C3	6.87E-02	4.83E-01	3.62E-04
	Disposal	C4	7.65E-03	1.08E-01	4.82E-05
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-6.68E-01	-2.03E+01	-5.93E-04

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

LCA Results (continued)

	Other environmental information describing output flows – at end of life								
			CRU	MFR	MER	EEE	EET	Biogenic carbon (product)	Biogenic carbon (packaging)
			kg	kg	kg	MJ per energy carrier	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	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	8.90E-03	1.11E-07	2.73E-03	9.22E-03	5.32E-03	0.00E+00
	Total (of product stage)	A1-3	0.00E+00	8.90E-03	1.11E-07	2.73E-03	9.22E-03	5.32E-03	0.00E+00
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	6.84E-05	1.09E-06	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	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	0.00E+00

CRU = Components for reuse;
MFR = Materials for recycling

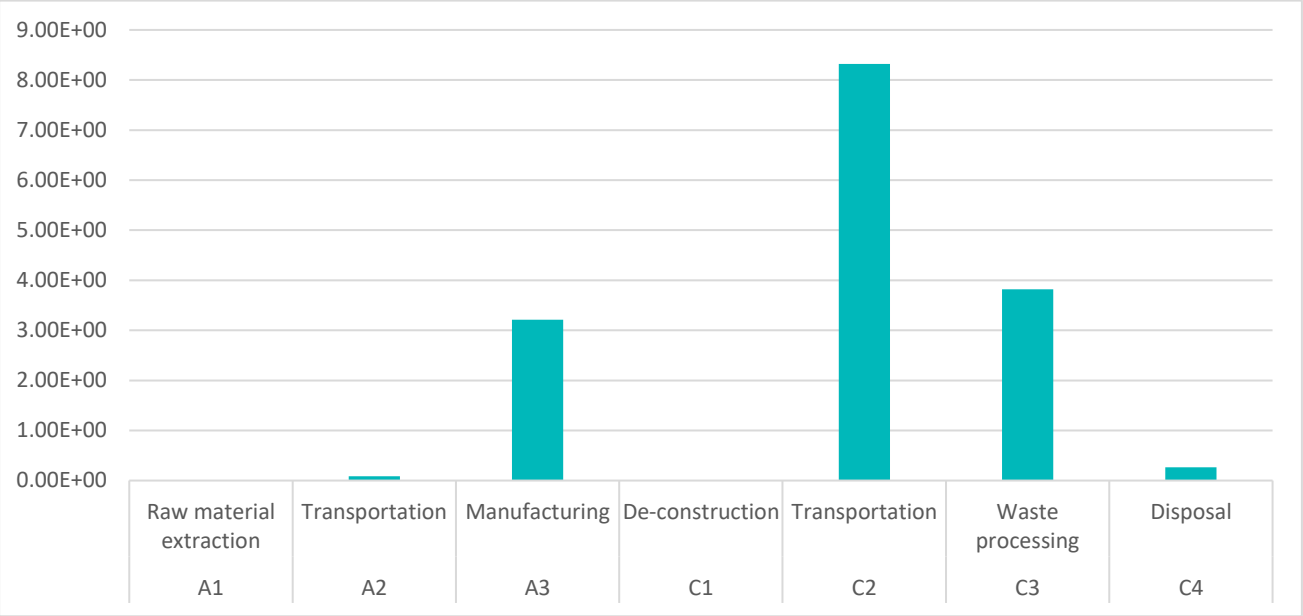
MER = Materials for energy recovery;
EEE = Exported Energy Electricity
EET = Exported Energy Thermal

Scenarios and additional technical information

Scenarios and additional technical information			
Scenario	Parameter	Units	Results
C1 - Deconstruction	Granite aggregate is used in bound and unbound applications. In this scenario, it's assumed as the granite aggregate is used in the bound applications such as concrete products which is sent to the waste processing facility after the demolition. Based on the actual practice, the energy required for this process is negligible compared to the energy for demolishing the entire building. Therefore, no data is included for this module.		
C2 – End of life transport	A distance of 50 km by road has been modelled for Module C2, reflecting a typical industry practice for transporting materials from the demolition site to the factory. End-users of this EPD can use this information to calculate the impacts of a custom transport distance for Module C2 if it required.	km	50
C3 – Waste Processing	At the waste processing facility, the assumed waste concrete in which the granite aggregates are embedded, will be crushed and used as the secondary material in the new system. According to the BRE 2023 Product Category Rules (PN 514 Rev3.1), at the end of life, 95% of aggregates are typically recycled.	Kg	950
C4 - Disposal	According to the BRE 2023 Product Category Rules (PN 514 Rev3.1), at the end of life, 5% of aggregates embedded in concrete are typically landfilled	Kg	50
Module D	In accordance with the BRE 2023 Product Category Rules (PN 514 Rev3.1). This module demonstrates that 95% of the aggregate can be recycled for future production. Based on a unit of 1000 kg in this EPD, this equates to 950 kg of recyclable aggregate.		

Interpretation of results

The bulk of the environmental impacts are attributed to the extraction/processing and waste treatment of granite aggregates, covered by information modules A1-A3 and C1-C4 of EN15804:2012+A2:2019. According to the percentage analysis of GWP, the module A3, the highest–emission stage in the aggregate production process at Glensanda Quarry and Module C2 (transportation of waste aggregates to the waste processing facility) have the highest impacts at the end-of-life stage and the Module C3 (Recycling) have significant contribution in the CO2 emissions.



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.

Product Category Rules for Type III Environmental Declaration of Construction Products to EN 15804+A2, PN 514 Rev 3.1. London, Bre Group,2023.

BS EN 1097-6 Tests for mechanical and physical properties of aggregates - Determination of particle density and water absorption

BS EN 1097-8 Tests for mechanical and physical properties of aggregates - Determination of the polished stone value

BS EN 1744-1 Tests for chemical properties of aggregates - Chemical analysis

BS EN 1097-1 Tests for mechanical and physical properties of aggregates - Determination of the resistance to wear (micro-Deval)

BS EN 1097-2 Tests for mechanical and physical properties of aggregates - Methods for the determination of resistance to fragmentation

BS EN 1367-4 Tests for thermal and weathering properties of aggregates. Determination of drying shrinkage

BS EN 932-3 Tests for general properties of aggregates - Procedure and terminology for simplified petrographic description

ASTM Standard C1260-14 Standard test method for potential alkali reactivity of aggregates (mortar-bar method)

BS EN 1367-2 Tests for thermal and weathering properties of aggregates - Magnesium sulfate test

BS EN 1367-5 Tests for thermal and weathering properties of aggregates - Determination of resistance to thermal shock

BS EN 12697-11 Bituminous mixtures. Test methods - Determination of the affinity between aggregate and bitumen

BS 812-111 Testing aggregates - Methods for determination of ten per cent fines value (TFV)

BS EN 196-2 Methods of testing cement - Determination of the chloride, carbon dioxide and alkali content of cement

BS EN 1367-4 Tests for thermal and weathering properties of aggregates. Determination of drying shrinkage

BS EN 933-9 Tests for geometrical properties of aggregates - Assessment of fines. Methylene blue test