

Statement of Verification

BREG EN EPD No.: 000199

Issue: 1

This is to verify that the
Environmental Product Declaration
 provided by:
Aggregate Industries UK Limited



is in accordance with the requirements of:
EN 15804:2012+A1:2013
 and
BRE Global Scheme Document SD207

This declaration is for:
Limestone Aggregate

Company Address

Bardon Hill
 Coalville
 Leicestershire
 LE67 1TL



Emma Baker
 Operator

01 February 2018
 Date of this Issue

01 February 2018
 Date of First Issue

31 January 2023
 Expiry Date



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Environmental Product Declaration

EPD Number: 000199

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE Environmental Profiles 2013 Product Category Rules for Type III environmental product declaration of construction products to EN 15804:2012+A1:2013
Commissioner of LCA study	LCA consultant/Tool
Aggregate Industries UK Ltd Bardon Hill Coalville Leicestershire LE 67 1TL	BRE LINA
Declared/Functional Unit	Applicability/Coverage
1 tonne of limestone aggregate	Product specific
EPD Type	Background database
Cradle to Gate	ecoinvent
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 <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External	
(Where appropriate ^b) Third party verifier: Kim Allbury	
a: Product category rules b: Optional for business-to-business communication; mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)	
Comparability	
Environmental product declarations from different programmes may not be comparable if not compliant with EN 15804:2012+A1:2013. 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+A1:2013 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
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: Ticks indicate the Information Modules declared.

Manufacturing site

Aggregate Industries
Torr Works
East Cranmore
Shepton Mallett
Somerset
BA4 4RA

Construction Product

Product Description

Limestone aggregates are produced from a naturally occurring sedimentary rock body by blasting, crushing and screening to produce different size aggregates from 225mm gabion stone to -2mm crushed rock fines.

Torr quarry produces over 5 million tonnes of aggregates per year. These products are used in a variety of applications including asphalt, ready-mixed and precast concrete, coastal and river defence and road construction.

Technical Information

Property	Value, Unit
Thermal conductivity (ASTM-D5334)	1.225 W/m.K
Resistance to Fragmentation (BS EN 1097-2:2010) / Los Angeles Coefficient	28
Oven Dried Particle Density (BS EN 1097-6:2013)	2.65 Mg/m ³
Water Absorption (BS EN 1097-6:2013)	0.8 %
Uniaxial Compressive Strength (BS EN 1926:2006)	158.9 MPa

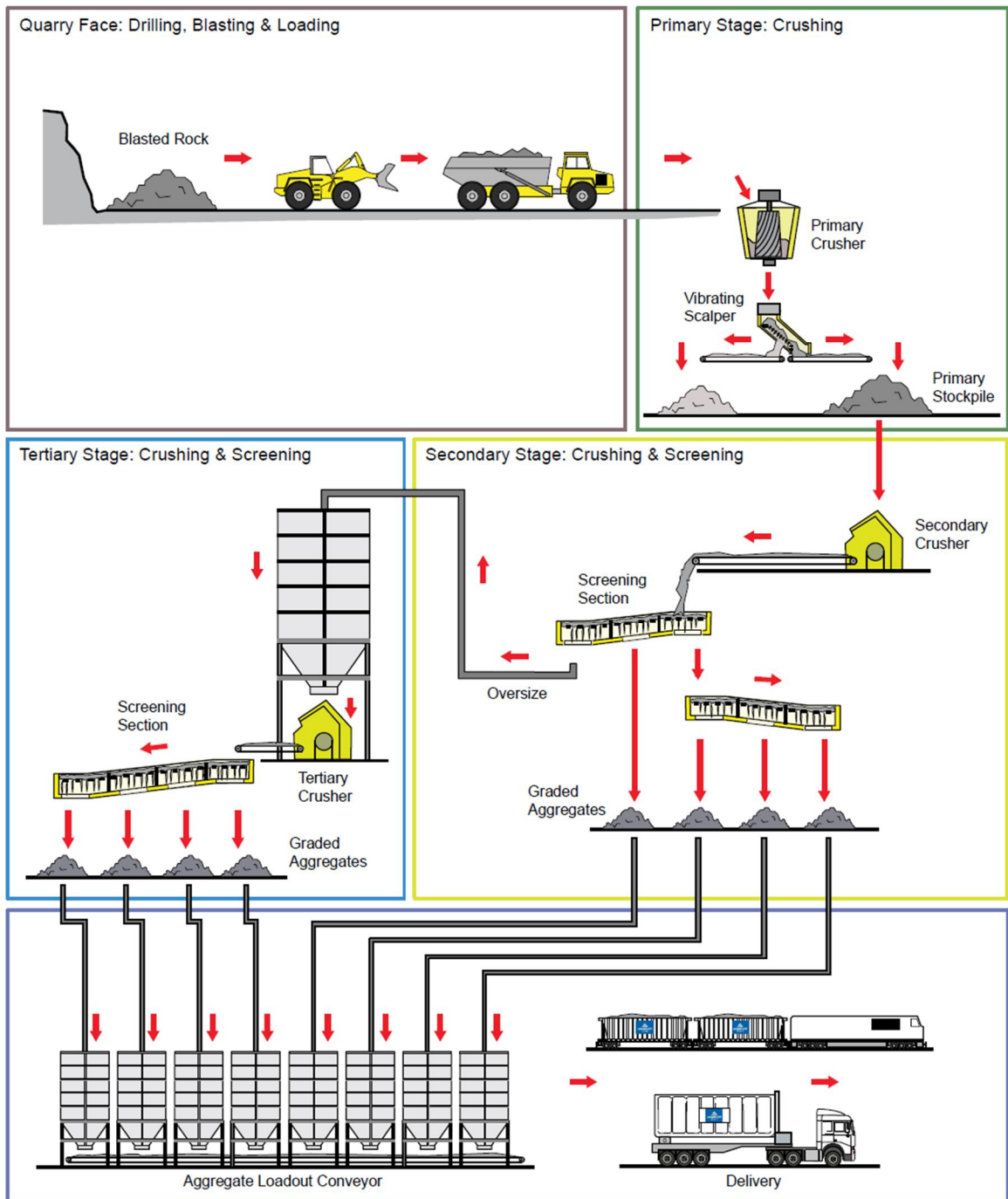
Main Product Contents

Material/Chemical Input	%
Limestone	100

Manufacturing Process

The sedimentary rock mass is drilled and then explosives are used to release several thousands tonnes of rock at a time. This rock which ranges in size from 2.5 meters to 0.5mm is loaded into a crusher to reduce larger pieces to 300 mm, this is transported by conveyor to a processing plant where crushing and screening takes place to produce various sized graded aggregates for sale. 70 % of Torr aggregates are delivered to customers by rail.

Process flow diagram



Richards Associates 2017

Aggregate Industries

Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1 tonne of limestone aggregate

System boundary

This is a cradle to gate EPD (i.e. processes covered in the extraction and processing in modules A1 to A3).

Data sources, quality and allocation

Specific primary data derived from Aggregate Industries Torr works have been modelled. In accordance with the requirements of EN 15804+A1, the most current available data has been used. The manufacture specific data from covers a production period 01/09/2016 to 30/09/17.

Within BRE LINA, all background LCI datasets have been taken from the ecoinvent database v3.2. 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 EN 15804+A1.

100% of the aggregates produced at the Torr works production site in the period are covered by this EPD. No allocation of total site energy use, water, waste and emissions was required.

Cut-off criteria

All raw materials and consumable item inputs, and associated transport to the plant, process energy and water use, direct production waste and wastewater are included.

LCA Results

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

Parameters describing environmental impacts

			GWP	ODP	AP	EP	POCP	ADPE	ADPF
			kg CO ₂ equiv.	kg CFC 11 equiv.	kg SO ₂ equiv.	kg (PO ₄) ³⁻ equiv.	kg C ₂ H ₄ equiv.	kg Sb equiv.	MJ, net calorific value.
Product stage	Raw material supply	A1	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	5.77e+0	7.16e-7	3.70e-2	9.27e-3	4.67e-3	8.65e-6	8.05e+1

GWP = Global Warming Potential;
 ODP = Ozone Depletion Potential;
 AP = Acidification Potential for Soil and Water;
 EP = Eutrophication Potential;

POCP = Formation potential of tropospheric Ozone;
 ADPE = Abiotic Depletion Potential – Elements;
 ADPF = Abiotic Depletion Potential – Fossil Fuels;

Parameters describing resource use, primary energy

			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	AGG	AGG	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	3.68e+0	8.74e-6	3.68e+0	9.09e+1	0.00	9.09e+1

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

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	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	0.00	0.00	0.00	2.33e-2

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	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG
	Total (of product stage)	A1-3	5.43e-2	1.82e-1	5.62e-4

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

Other environmental information describing output flows – at end of life						
			CRU	MFR	MER	EE
			kg	kg	kg	MJ per energy carrier
Product stage	Raw material supply	A1	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	0.00	2.05e-2	1.32e-2	0.00

CRU = Components for reuse;
 MFR = Materials for recycling

MER = Materials for energy recovery;
 EE = Exported Energy

Summary, comments and additional information

About Torr Quarry

Torr quarry produces circa 5 million tonnes of aggregates and crushed rock fines a year, it has its own rail siding and sends 70% of output by rail to depots in South East England, the majority of which is supplied to the London market. The site is unique amongst UK quarries in that it has a “walking” primary crusher that is located near to the face being worked and moved periodically. This minimises the transport distance for the face rock. Once the rock is crushed it is transported by a movable conveyor system to the processing plant. The system used reduces the reliance on large dump trucks to transport primary rock several kilometres around the site, saving on diesel fuel used.

The Quarry is certified to The Wildlife Trust’s Biodiversity Benchmark standard and has its own 27 acre reservoir that is used to augment local watercourses when the flow is reduced. The system is fully automated with flow meters linked to variable speed pumps to control the water added. In addition, the site is part of the Mendips Hills Living Landscape Partnership with the Somerset Wildlife Trust which helps to create biodiversity rich environments that link to similar areas, by providing corridors for fauna and flora to spread.

About Aggregate Industries

Aggregate Industries was the first company to be certified to BES 6001 Framework Standard for Responsible Sourcing. We are a heavy weight construction materials company producing and supplying an array of material with over 300 sites and more than 4000 dedicated employees. We produce cement, aggregates, asphalt, ready-mixed concrete and precast concrete products as well as specialist lightweight aggregates (Lytag) and sands. We also offer a national road surfacing service. Our products and services are certified to ISO 9001, 14001 & OHSAS 18001.

Aggregate Industries are part of the LafargeHolcim Group, which is the leading global building materials and solutions company with around 90,000 employees in over 80 countries. It holds leading positions in all regions with a balanced portfolio in developing and mature markets.

References

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