

ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN 15804+A2 

Tarmac Holdings Limited
Hardstone Average



Owner of the declaration

Tarmac Holdings Limited
Ground Floor, T3 Trinity Park, Bickenhill
Lane
B37 7ES Birmingham
United Kingdom

Product

Hardstone Average

Declared product / Declared unit

1 t

**This declaration is based on Product
Category Rules**

EN 15804:2012 + A2:2019,
NPCR Part B for natural stone products,
aggregates and fillers (v1.0)

Program operator:

EPD Norway
Majorstuen P.O. Box 5250
N-0303 Oslo
Norway

Declaration number

NEPD-10158-10158-2

Registration number

NEPD-10158-10158-2

Issue date

22.07.2025

Valid to

21.07.2030

EPD Software

Emidat EPD Tool v1.0.0

General Information

Product

Hardstone Average

Program Operator

EPD Norway
 Majorstuen P.O. Box 5250
 N-0303 Oslo
 Norway
 Phone: +47 23 08 80 00
 Email: post@epd-norge.no

Declaration Number

NEPD-10158-10158-2

This declaration is based on Product Category Rules

EN 15804:2012 + A2:2019,
 NPCR Part B for natural stone products, aggregates and
 fillers (v1.0)

Statements

The owner of the declaration shall be liable for the
 underlying information and evidence. EPD Norway shall
 not be liable with respect to manufacturer, life cycle
 assessment data and evidences.

Declared unit

1 t

General information on verification of EPD from EPD tools

Independent verification of data, other environmental
 information and the declaration according to ISO
 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD
 is made according to EPDNorway's guidelines for
 verification and approval requiring that tools are i)
 integrated into the company's environmental
 management system, ii) the procedures for use of the
 EPD tool are approved by EPD-Norway, and iii) the
 process is reviewed annually by an independent third
 party verifier. See Appendix G of EPD-Norway's General
 Programme Instructions for further information on EPD
 tools.

Verification of EPD tool

Charlotte Merlin, FORCE Technology
 (no signature required)

Owner of the declaration

Tarmac Holdings Limited

Contact person

rebecca.eccles@tarmac.com

Phone

+44 7860 659121

Email

rebecca.eccles@tarmac.com

Manufacturer

Tarmac Holdings Limited
 Ground Floor, T3 Trinity Park, Bickenhill Lane
 B37 7ES Birmingham, United Kingdom

Place of production

UK, United Kingdom

Management system

ISO 9001, ISO 14001, ISO 45001, ISO 50001, BES 6001

Issue date

22.07.2025

Valid to

21.07.2030

Year of study

2024

Comparability

EPDs of construction products may not be comparable if
 they do not comply with EN 15804 and are not seen in a
 building context. EPD data may not be comparable if the
 datasets used are not developed in accordance with EN
 15804 and if the background systems are not based on
 the same database (including primary and secondary
 data).

Development and verification of EPD

The declaration was created using the Emidat EPD tool
 v1.0, developed by Emidat GmbH. The EPD tool has been
 approved by EPD Norway.

Developer of EPD: Rebecca Eccles

Reviewer of company-specific input data and EPD: Amal
 Saleh

Approved



Håkon Hauan, CEO EPD-Norge

Product

Product description

Tarmac’s hardstone is a premium-grade aggregate known for its hardness, durability, and angular shape. It is sourced from specialist quarries across the UK, where the material is extracted through controlled excavation or blasting depending on site geology. Once quarried, the stone undergoes crushing, screening, and grading to produce a consistent product available in a range of sizes and specifications. With its naturally high polished stone value (PSV), hardstone delivers excellent skid resistance and long-term performance.



Tarmac’s hardstone is used extensively in real-world infrastructure projects where durability and safety are critical. It is used for motorways, dual carriageways, and urban roads, offering high skid resistance to reduce accidents in high-traffic areas. Local authorities and contractors rely on it for junctions, roundabouts, and pedestrian crossings, where surface grip is essential. Hardstone is also used in airport runways, railway ballast, and industrial yards, where its strength supports heavy loads and constant wear. Its consistent performance makes it a trusted choice for public transport hubs, logistics centres, and commercial developments across the UK.

Product specification

Name of ingredient	Share of total weight	Country of origin
Aggregates	100 %	United Kingdom

Technical data

	Unit	Value
Gross density	kg / m³	1700.0

Market

United Kingdom

LCA: Calculation rules

Declared unit

1 t

Reference service life

50 years

Data quality

The foreground data are based on extensive and detailed data collection at the production site of the manufacturer, covering key processes such as raw material sourcing, formulation, and manufacturing. These foreground data are fully linked with corresponding datasets from the background database (ecoinvent 3.10) or with EN15804+A2-compliant EPDs, ensuring consistency, reliability, and maintaining alignment with the latest industry standards. The overall data representativeness is rated as good with an overall score of 4.00/5.

System boundaries (X=included, MND=module not declared)

	Production			Installation		Use stage							End-of-Life				Next product system
	Raw material supply	Transport	Manufacturing	Transport	Installation Process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Demolition	Transport	Waste Processing	Disposal	Benefits and loads beyond the system boundary
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	x	x	x	MND	MND	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x
Geography			GB	MND	MND	MND	MND	MND	MND	MND	MND	MND	GB	GB	GB	GB	GB

For the geographies modeled in A1 and A2, refer to *Product specification*.

Type of EPD: Cradle to gate with options C1, C2, C3, C4 and D

Stage of Material Production and Construction

Module A: Production and transportation of explosives for blasting and fuels for machinery operation. Aggregates extraction, crushing and sizing at the site and waste treatment

Disposal Stage

Module C1: Crushing and screening of demolition waste

Module C2: Transport of waste for processing

Module C3: Recovery and reuse as recycled aggregates in road bases, concrete, or other construction applications

Module C4: Final disposal of waste

Credits and burdens outside the system boundaries

Module D: Credits and burdens beyond the lifecycle

Cut-off criteria

No cut-offs were applied.

Allocation

Elementary flows (energy and fuels, ancillary materials and waste) data was collected on production-process-level. Using the total output of the production process in 2024, elementary flows are assigned to 1 declared unit based on mass.

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Transport to the waste facility (C2)	Value	Unit
Mass to recycling	1000.00	kg
Distance to recycling by truck	50.00	km
Truck: Activity	transport, freight, lorry >32 metric ton, EURO6	-
Truck: Capacity utilization	53.30	%
Truck: Distance	50.00	km
Truck: Energy demand	1.58	MJ / t*km

Waste processing (C3)	Value	Unit
Material for recycling	1000.00	kg

Reuse, recovery and/or recycling potentials (D)	Value	Unit
Amount of secondary material that the system takes in	0	kg
Substitution of aggregates	1000.00	kg
Exported electrical energy	4.77e-03	MJ
Exported thermal energy	0.06	MJ

Calculation of benefits and loads per EN 15804+A2.

LCA: Results

Core environmental impact indicators

Indicator	Unit	A1-3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	5.64e+00	2.00e-02	5.18e+00	1.14e+01	0	7.66e+00
GWP-fossil	kg CO ₂ -eq.	5.64e+00	2.00e-02	5.18e+00	1.13e+01	0	7.72e+00
GWP-biogenic	kg CO ₂ -eq.	4.82e-04	2.00e-06	2.60e-03	7.13e-02	0	-5.28e-02
GWP-luluc	kg CO ₂ -eq.	1.38e-03	1.74e-06	1.84e-03	2.57e-03	0	4.04e-04
ODP	kg CFC-11-Eq	1.07e-07	3.07e-10	1.08e-07	2.27e-07	0	1.82e-07
AP	mol H ⁺ -Eq	1.25e-01	1.81e-04	1.22e-02	8.44e-02	0	5.58e-02
EP-freshwater	kg P-Eq	3.37e-04	5.84e-07	3.64e-04	3.51e-03	0	2.82e-03
EP-marine	kg N-Eq	4.42e-02	8.39e-05	3.21e-03	3.30e-02	0	2.45e-02
EP-terrestrial	mol N-Eq	6.32e-01	9.18e-04	3.47e-02	3.59e-01	0	2.45e-01
POCP	kg NMVOC-Eq	1.36e-01	2.74e-04	2.12e-02	1.16e-01	0	8.78e-02
ADPE	kg Sb-Eq	9.45e-06	7.18e-09	1.48e-05	3.62e-05	0	-1.40e-05
ADPF	MJ, net calorific value	7.75e+01	2.62e-01	7.77e+01	1.81e+02	0	1.29e+02
WDP	m ³ world Eq deprived	6.10e-01	6.42e-04	3.90e-01	2.51e+00	0	-1.32e+01

GWP-total: Global Warming Potential - total **GWP-fossil:** Global warming potential - fossil **GWP-biogenic:** Global Warming Potential - biogenic **GWP-luluc:** Global Warming Potential - luluc **ODP:** Depletion potential of the stratospheric ozone layer **AP:** Acidification potential, Accumulated Exceedance **EP-freshwater:** Eutrophication potential - freshwater **EP-marine:** Eutrophication potential - marine **EP-terrestrial:** Eutrophication potential - terrestrial **POCP:** Photochemical Ozone Creation Potential **ADPE:** Abiotic depletion potential - non-fossil resources **ADPF:** Abiotic depletion potential - fossil resources **WDP:** Water (user) deprivation potential

Additional indicators

Indicator	Unit	A1-3	C1	C2	C3	C4	D
PM	disease incidence	1.67e-06	5.14e-09	5.04e-07	9.40e-06	0	8.75e-06
IRP	kBq U235-Eq	5.48e-01	1.17e-04	9.44e-02	7.95e-01	0	4.57e-02
ETP-fw	CTUe	7.38e+01	3.71e-02	1.84e+01	5.95e+01	0	2.09e+01
HTP-c	CTUh	2.14e-08	7.83e-11	3.31e-08	6.47e-08	0	-1.99e-08
HTP-nc	CTUh	1.80e-08	3.56e-11	5.13e-08	1.19e-07	0	6.94e-08
SQP	dimensionless	7.38e+00	1.84e-02	7.82e+01	1.74e+02	0	6.62e+01

PM: Potential incidence of disease due to PM emissions **IRP:** Potential Human exposure efficiency relative to U235 **ETP-fw:** Potential Comparative Toxic Unit for ecosystems **HTP-c:** Potential Comparative Toxic Unit for humans - cancer effects **HTP-nc:** Potential Comparative Toxic Unit for humans - non-cancer effects **SQP:** Potential Soil quality index

IRP: 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.

ETP-fw, HTP-c, HTP-nc and SQP: The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with these indicators.

Use of resources

Indicator	Unit	A1-3	C1	C2	C3	C4	D
PERE	MJ	1.20e+00	1.60e-03	1.23e+00	1.48e+01	0	-2.51e+00
PERM	MJ	0	0	0	0	0	0
PERT	MJ	1.20e+00	1.60e-03	1.23e+00	1.48e+01	0	-2.51e+00
PENRE	MJ	7.75e+01	2.62e-01	7.77e+01	1.81e+02	0	1.29e+02
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	7.75e+01	2.62e-01	7.77e+01	1.81e+02	0	1.29e+02
SM	kg	0	0	0	0	0	1.00e+03
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m³	2.65e-02	1.70e-05	1.13e-02	-4.35e-01	0	-8.01e-01

PERE: Primary energy resources - renewable: use as energy carrier **PERM:** Primary energy resources - renewable: used as raw materials **PERT:** Primary energy resources - renewable: total **PENRE:** Primary energy resources - non-renewable: use as energy carrier **PENRM:** Primary energy resources - non-renewable: used as raw materials **PENRT:** Primary energy resources - non-renewable: total **SM:** Use of secondary material **RSF:** Renewable secondary fuels **NRSF:** Non-renewable secondary fuels **FW:** Net use of fresh water

Waste flows

Indicator	Unit	A1-3	C1	C2	C3	C4	D
HWD	kg	1.68e-01	2.93e-04	1.13e-01	2.61e-01	0	-8.31e-02
NHWD	kg	2.46e+00	4.00e-03	2.26e+00	6.26e+02	0	6.20e+02
RWD	kg	1.16e-04	2.88e-08	2.34e-05	1.84e-04	0	1.24e-05

HWD: Hazardous waste disposed **NHWD:** Non hazardous waste disposed **RWD:** Radioactive waste disposed

Output flows

Indicator	Unit	A1-3	C1	C2	C3	C4	D
CRU	kg	0	0	0	0	0	0
MFR	kg	0	0	0	1.00e+03	0	0
MER	kg	0	0	0	0	0	0
EEE	MJ	4.77e-03	0	0	0	0	0
EET	MJ	6.42e-02	0	0	0	0	0

CRU: Components for re-use **MFR:** Materials for recycling **MER:** Materials for energy recovery **EEE:** Exported electrical energy **EET:** Exported thermal energy

Name	Value	Unit
Biogenic carbon content in product	0	kg C
Biogenic carbon content in accompanying packaging	0	kg C

Additional requirements

Greenhouse gas emissions from the use of electricity in the manufacturing phase

Electricity consumption in the manufacturing phase is composed from the source below. Electricity is represented by data in ecoinvent 3.10 regionalised for United Kingdom.

Electricity	Unit	Value
Electricity from grid	kg CO ₂ -eq. / kWh	0.45

Dangerous substances

The product contains no hazardous substances given by the REACH Candidate List or the Norwegian Priority List.

Additional environmental information

Additional environmental impact indicators required in NPCR Part A for construction products

Indicator	Unit	A1-3	C1	C2	C3	C4	D
GWP-IOBC	kg CO ₂ -eq.	5.64e+00	2.00e-02	5.18e+00	1.13e+01	0	7.72e+00

GWP-IOBC: Global Warming Potential - Instantaneous oxidation of biogenic carbon

Bibliography

DIN EN ISO 14025:2011-10	Environmental labels and declarations - Type III environmental declarations - Principles and procedures
DIN EN ISO 14040:2021-02	Environmental management - Life cycle assessment - Principles and framework
DIN EN ISO 14044:2021-02	Environmental management - Life cycle assessment - Requirements and guidelines
EN 15804:2012+A2:2019	Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
DIN CENTR 15941:2010-11	Sustainability of construction works - Environmental product declarations - Methodology for selection and use of generic data
DIN EN 15942:2022-04	Sustainability of construction works - Environmental product declarations - Communication format business-to-business
ISO 21930:2017-07	Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services
ecoinvent v3.10	ecoinvent, Zurich, Switzerland, database version 3.10
PCR	NPCR Part B for natural stone products, aggregates and fillers (v1.0)
	Basic principles and recommendations for describing the dismantling, post use, and disposal stage of construction products: https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2020-07-06_texte_130-2020_guidance-document-construction-industry.pdf
	ILCD Handbook: https://eplca.jrc.ec.europa.eu/uploads/ILCD-Handbook-LCIA-Background-analysis-online-12March2010.pdf

	Program Operator	Phone	+47 23 08 80 00
	EPD Norway	Email	post@epd-norge.no
	Majorstuen P.O. Box 5250, N-0303 Oslo Norway	Web	www.epd-norge.no
	Publisher	Phone	+47 23 08 80 00
	The Norwegian EPD Foundation	Email	post@epd-norge.no
	Post Box 5250 Majorstuen, 0303 Oslo Norway	Web	www.epd-norge.no
	Owner of the declaration	Phone	+44 7860 659121
	Tarmac Holdings Limited	Email	rebecca.eccles@tarmac.com
	Ground Floor, T3 Trinity Park, Bickenhill Lane, B37 7ES Birmingham United Kingdom	Web	www.tarmac.com
	Author of the life cycle assesment	Phone	+44 7860 659121
	Tarmac Holdings Limited	Email	rebecca.eccles@tarmac.com
	Ground Floor, T3 Trinity Park, Bickenhill Lane, B37 7ES Birmingham United Kingdom	Web	www.tarmac.com
	ECO Platform ECO Portal	Web	www.eco-platform.org
		Web	ECO Portal
	Developer of EPD generator	Phone	+49 176 56 96 77 91
	Emidat GmbH	Email	epd@emidat.com
	Sandstraße 33, 80335 München Germany	Web	www.emidat.com