

ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN 15804+A2 

Tarmac Holdings Limited **Hydrated Lime Mortar (HLM) 2.5**



Owner of the declaration

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

Product

Hydrated Lime Mortar (HLM) 2.5

Declared product / Declared unit

1 kg of applied mortar

This declaration is based on Product Category Rules

EN 15804:2012 + A2:2019,
NPCR 009 Part B for Technical - Chemical
products for building and construction
industry

Program operator:

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

Declaration number

NEPD-10255-10255-2

Registration number

NEPD-10255-10255-2

Issue date

01.09.2025

Valid to

31.08.2030

EPD Software

Emidat EPD Tool v1.0.0

General Information

Product

Hydrated Lime Mortar (HLM) 2.5

Program Operator

EPD Norway
 Majorstuen P.O. Box 5250
 N-0303 Oslo
 Norway
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 Email: post@epd-norge.no

Declaration Number

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 NPCR 009 Part B for Technical - Chemical products for
 building and construction industry

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 kg of applied mortar

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

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Manufacturer

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

Place of production

Birmingham, United Kingdom

Management system

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

Issue date

01.09.2025

Valid to

31.08.2030

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: Amall
 Saleh

Approved

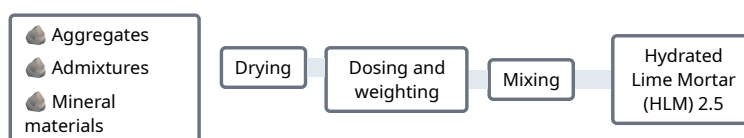


Håkon Hauan, CEO EPD-Norge

Product

Product description

Tarmac's Hydrated Lime Mortar (HLM) 2.5 is a factory-produced mortar formulated with a blend of hydraulic lime and carefully selected sands. Designed to meet the requirements of BS EN 998-2, it is classified as HLM 2.5, offering a typical minimum compressive strength of 2.5 N/mm² at 91 days. This mortar provides enhanced workability, flexibility, and breathability, making it particularly suitable for applications where movement tolerance and moisture regulation are important. Produced in BSI-accredited facilities, under an ISO 9001 quality scheme, and available in bulk or silo formats, HLM 2.5 ensures consistent quality and ease of use across a range of construction environments.



Tarmac's HLM 2.5 is ideal for use in masonry construction where a lower-strength, more flexible mortar is required. Its lime-rich formulation makes it especially suitable for heritage restoration, soft brickwork, and structures requiring improved vapor permeability. HLM 2.5 offers excellent adhesion and accommodates slight movement within masonry units, helping to reduce the risk of cracking. It also contributes to the long-term durability and aesthetic integrity of both internal and external walls, particularly in conservation and refurbishment projects.

Product specification

Name of ingredient	Share of total weight	Country of origin
Admixtures	2 - 10 %	United Kingdom
Aggregates	80 - 100 %	United Kingdom
Mineral materials	10 - 25 %	United Kingdom

Technical data

	Unit	Value
Gross density	kg / m ³	1800.0
Mixing water demand	l / kg	0.13

Market

United Kingdom

LCA: Calculation rules

Declared unit

1 kg of applied mortar

Reference service life

Not defined

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 4.15/5, in accordance with EN 15804+A2 Annex E guidance on data quality assessment, considering geographical, technical, and temporal representativeness.

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	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x
Geography			GB	GB	GB	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 A4, A5, C1, C2, C3, C4 and D

Stage of Material Production and Construction

Module A1: Extraction and processing of mortar raw materials

Module A2: Transportation of raw materials to the mortar plant

Module A3: Mortar production at the plant and waste treatment

Module A4: Transportation to the construction site

Module A5: Includes processes associated with installation of the mortar, as well as the production, transportation, and treatment of unused mortar

Disposal Stage

Module C1: Demolition/Dismantling

Module C2: Transportation of demolition waste for processing

Module C3: Recycling of mortar waste as part of its carrier material. No separation of the mortar waste from the carrier material is possible. Concrete is used as the carrier material

Module C4: Final disposal of mortar waste in sanitary landfill together with carrier material. No separation of the mortar waste from the carrier material is possible. Concrete is used as the carrier material

Credits and burdens outside the system boundaries

Module D: Credits and burdens for the use of production waste in A3 or packaging waste in A5 as a secondary fuel or thermal/electrical energy generation. Credits and burdens from the use of mortar waste as a replacement for primary materials (aggregates), as part of its carrier material (concrete).

Cut-off criteria

No cut-offs were applied.

Allocation

Foreground inventory data (energy and fuels, ancillary materials, emissions and waste) was collected at the production-process level. Using the total output of the production process in 2024, these flows are allocated to one 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 building site (A4)	Value	Unit
Transported mass	1.00	kg
Truck: Distance	300.00	km
Truck: Energy demand	1.58	MJ / t*km
Truck: Activity	transport, freight, lorry >32 metric ton, EURO6	-
Truck: Capacity utilization	53.30	%

Installation into the building (A5)	Value	Unit
Installation loss	5.00	%
Water	0.13	kg

During installation, 0.13 kg of water is added to the product. For the remaining lifecycle stages, this LCA considers 0.13 kg of material in addition to the mass of the product.

Demolition (C1)	Value	Unit
Diesel for dismantling	0.07	MJ
PM 2.5 emissions	1.88e-05	kg
PM 10 emissions	7.16e-05	kg

Transport to the waste facility (C2)	Value	Unit
Mass to recycling	0.11	kg
Mass to landfill	1.02	kg
Distance to landfill by truck	50.00	km
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	0.11	kg

At the end of life, 10% of the material is recycled and 90% is sent to landfill.

Disposal (C4)	Value	Unit
Material for landfill	1.02	kg

Reuse, recovery and/or recycling potentials (D)	Value	Unit
Amount of secondary material that the system takes in	0	kg
Substitution of gravel	0.11	kg

Calculation of benefits and loads per EN 15804+A2.

LCA: Results

Core environmental impact indicators

Indicator	Unit	A1-3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO ₂ -eq.	1.12e-01	3.11e-02	1.13e-02	6.93e-03	5.86e-03	4.95e-04	6.36e-03	-2.31e-04
GWP-fossil	kg CO ₂ -eq.	1.11e-01	3.11e-02	1.01e-02	6.93e-03	5.85e-03	4.95e-04	6.36e-03	-2.25e-04
GWP-biogenic	kg CO ₂ -eq.	1.63e-04	1.56e-05	1.27e-03	6.92e-07	2.94e-06	4.94e-08	6.58e-07	-6.13e-06
GWP-luluc	kg CO ₂ -eq.	9.14e-06	1.10e-05	3.73e-06	6.02e-07	2.08e-06	4.30e-08	3.30e-06	-2.53e-08
ODP	kg CFC-11-Eq	1.45e-09	6.47e-10	1.94e-10	1.06e-10	1.22e-10	7.57e-12	1.84e-10	-3.17e-12
AP	mol H ⁺ -Eq	2.05e-04	7.34e-05	3.01e-05	6.25e-05	1.38e-05	4.46e-06	4.51e-05	-1.94e-06
EP-freshwater	kg P-Eq	7.45e-06	2.19e-06	1.37e-06	2.02e-07	4.12e-07	1.44e-08	5.28e-07	-9.92e-09
EP-marine	kg N-Eq	6.45e-05	1.92e-05	8.22e-06	2.90e-05	3.62e-06	2.07e-06	1.72e-05	-7.69e-07
EP-terrestrial	mol N-Eq	7.22e-04	2.08e-04	8.62e-05	3.17e-04	3.92e-05	2.27e-05	1.87e-04	-8.98e-06
POCP	kg NMVOC-Eq	2.54e-04	1.27e-04	3.25e-05	9.47e-05	2.40e-05	6.76e-06	6.72e-05	-2.57e-06
ADPE	kg Sb-Eq	6.70e-08	8.88e-08	8.49e-08	2.48e-09	1.67e-08	1.77e-10	1.01e-08	-2.30e-09
ADPF	MJ, net calorific value	8.01e-01	4.66e-01	3.12e-01	9.06e-02	8.78e-02	6.47e-03	1.56e-01	-3.28e-03
WDP	m ³ world Eq deprived	1.16e-02	2.34e-03	3.84e-02	2.22e-04	4.41e-04	1.58e-05	4.36e-04	-1.58e-04

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	A4	A5	C1	C2	C3	C4	D
PM	disease incidence	1.82e-09	3.03e-09	5.09e-10	1.02e-08	5.70e-10	9.67e-10	1.02e-09	-5.32e-11
IRP	kBq U235-Eq	5.88e-03	5.67e-04	1.37e-02	4.06e-05	1.07e-04	2.90e-06	9.94e-05	-3.78e-05
ETP-fw	CTUe	8.76e-02	1.11e-01	5.18e-02	1.28e-02	2.08e-02	9.17e-04	2.13e-02	-1.62e-03
HTP-c	CTUh	1.28e-10	1.99e-10	8.74e-11	2.71e-11	3.75e-11	1.93e-12	2.87e-11	-3.66e-12
HTP-nc	CTUh	4.98e-10	3.08e-10	1.27e-10	1.23e-11	5.79e-11	8.78e-13	2.80e-11	-2.13e-12
SQP	dimensionless	1.93e-01	4.69e-01	1.38e-01	6.35e-03	8.83e-02	4.53e-04	3.07e-01	-7.40e-03

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 experienced with these indicators.

Use of resources

Indicator	Unit	A1-3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	4.42e-02	7.40e-03	2.53e-01	5.54e-04	1.39e-03	3.96e-05	1.45e-03	-1.07e-03
PERM	MJ	0	0	0	0	0	0	0	0
PERT	MJ	4.42e-02	7.40e-03	2.53e-01	5.54e-04	1.39e-03	3.96e-05	1.45e-03	-1.07e-03
PENRE	MJ	8.01e-01	4.66e-01	3.12e-01	9.06e-02	8.78e-02	6.47e-03	1.56e-01	-3.28e-03
PENRM	MJ	0	0	0	0	0	0	0	0
PENRT	MJ	8.01e-01	4.66e-01	3.12e-01	9.06e-02	8.78e-02	6.47e-03	1.56e-01	-3.28e-03
SM	kg	0	0	0	0	0	0	0	1.13e-01
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m ³	1.53e-03	6.78e-05	1.10e-03	5.89e-06	1.28e-05	4.20e-07	1.62e-04	-1.61e-04

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	A4	A5	C1	C2	C3	C4	D
HWD	kg	1.97e-03	6.78e-04	5.12e-04	1.01e-04	1.28e-04	7.23e-06	1.73e-04	-1.47e-05
NHWD	kg	4.00e-02	1.36e-02	6.07e-02	1.38e-03	2.56e-03	9.88e-05	1.02e+00	-1.52e-04
RWD	kg	1.30e-06	1.40e-07	3.11e-06	9.95e-09	2.64e-08	7.10e-10	2.42e-08	-8.11e-09

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

Output flows

Indicator	Unit	A1-3	A4	A5	C1	C2	C3	C4	D
CRU	kg	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	1.13e-01	0	0
MER	kg	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	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	A4	A5	C1	C2	C3	C4	D
GWP-IOBC	kg CO ₂ -eq.	1.11e-01	3.11e-02	1.01e-02	6.93e-03	5.85e-03	4.95e-04	6.37e-03	-2.25e-04

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 009 Part B for Technical - Chemical products for building and construction industry
	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

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