Environmental Product Declaration

in accordance with
ISO 14025 & EN 15804+A2

Foamix Eco™ Asphalt with XyloBIND E20 - Static Production Facility

Programme Operator
Circular Ecology EPD Programme

Publication Date
19-06-2026

EPD Registration Number
CE-EPD-HOL-0008-1

Valid Until
19-06-2031

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

General Information

Product Name
Foamix Eco™ Asphalt with
XyloBIND E20 - Static Production Facility

Product Category
Cold Recycled Bound Material

EPD Type
Product EPD

Declaration Type
Cradle to Gate with Options

Declared Unit
1 tonne

Mass per Declared Unit
1000 kg

Geographical Scope
United Kingdom

Year of Study
2026

Product Category Rules
Core PCR: EN 15804:2012+A2:2019
Additional PCR: Circular Ecology Product Category Rules for Construction and Building Sector v1.0, December 2025

Applicable Standards
EN 15804:2012+A2:2019; ISO 14025:2006; ISO 14040:2006; ISO 14044:2006

EPD Owner
Holcim UK Limited Bardon Hill, Coalville, Leicestershire LE67 1TL

EPD Programme Operator
Circular Ecology EPD Programme
124 City Road, London, UK

LCA Practitioner
Joe Rouse
Circular Ecology

Manufacturer Information
Holcim UK Limited
Bardon Hill, Coalville, Leicestershire LE67 1TL

Intended Audience
Business-to-Business (B2B)

Comparability
EPDs of construction products are comparable only when they comply with EN 15804 +A2:2019 and ISO 14025, and when compared within the same product category and building context.

Liability
This EPD is based on data provided by the manufacturer and verified under the Circular Ecology EPD Programme. The EPD owner has sole responsibility and liability for the EPD.

Verification Type
Independent verification of the declaration and data, according to ISO 14025:2006 (Relative to the EPD Owner).
Internally Verified: ☐
Externally Verified: ☒

Verifier Details
Jon Burrow

Organisation & Product Information

Description of Organisation

Holcim UK Ltd are leaders in supplying innovative, sustainable building solutions to the UK construction industry. They offer an integrated service that combines national road surfacing with in-house supply and production of a wide range of innovative and sustainable construction materials and products.

Holcim is a progressive, future-facing business. A company that is intrinsically sustainable-trusted and respected by stakeholders and the communities in which it operates. Their Sustainability Strategy is central in driving their business, which will accelerate their transition to Net Zero and to becoming Nature Positive, providing clear milestones and measurable results along the way. Sustainability is an essential part of how they do business. To help achieve this, they have developed a range of innovative solutions designed to support customer needs and improve the sustainability of their projects.

Product Name

Foamix Eco™ Asphalt with XyloBIND E20 manufactured in a static production facility.

Product Description

Foamix Eco™ represents an evolution within the Foamix™ cold-lay asphalt solution, achieving a lower carbon status through the integration of bio-based pellets and recycled asphalt. This product is manufactured using static production facilities, with production taking place at fixed plant locations. This development is a testament to extensive research and collaboration across the supply chain, marking a significant step towards achieving net zero ambitions in infrastructure construction.

Product Application

Foamix Eco™ is used in pavement construction and maintenance, primarily as a cold recycled bound material for road base and binder layers. It is suitable for use in highways, local roads and infrastructure projects where recycled asphalt solutions are required. Foamix Eco™ is designed to meet UK highway specifications and is compliant with Manual of Contract Documents for Highway Works (MCHW) Volume 1 Series 900 Clause 948, CC202 Clause 6, and BS 9228.

Name and Locations of Production Site(s)

Production data for this EPD was collected from static Foamix™ manufacturing facilities operating at Micheldever, Hampshire (SO21 3BB) and Croft, Leicestershire (LE9 3GP) in the United Kingdom.

Product Contents Information

Product Content Category	Mass (%)
Mineral Materials and Organic Additives (recycled asphalt planings, XyloBIND pellets, cement, water, pulverised fuel ash)	97
Fossil Materials (bitumen)	3
Total	**100**

Due to commercial sensitivity, detailed composition percentages for certain constituents are not disclosed. All values used in the LCA model reflect the actual product composition and have been verified.

Packaging Contents Information

No packaging is used for Foamix Eco™. All raw materials and finished products are handled and supplied in bulk and are measured and accounted for using weighbridge records. As a result, no packaging materials or associated impacts are included within the scope of this study.

LCA Information

Declared Unit

1 tonne of asphalt product.

Reference Service Life

Not declared.

Time Representativeness

Primary data used in this assessment are representative of Foamix Eco™ production during the 2025 calendar year. The data represent a continuous twelve month period under normal operating conditions.

Geographical Scope

The geographical scope of the assessment is the United Kingdom. Primary manufacturing data represents production from two UK based static production facilities. Secondary datasets are selected to be geographically representative of the United Kingdom or Europe where UK specific data are not available.

Database & LCA Software

The life cycle assessment was modelled using ecoinvent database version 3.11, system model cut off, implemented in openLCA software.

Additional Data Sources

Specific Environmental Product Declarations and Life Cycle Assessments have been used to model key input materials. The XyloBIND E20 pellet was modelled using data from the study EN 15804 Life Cycle Assessments of XyloBIND E10, E20, ME50 & M80 Bio Based Materials for Gautam Zen, undertaken by Circular Ecology for Gautam Zen in 2026. Cement inputs are modelled using an EPD for Portland cement production (IBU-CEI-HOL-2203120-UK2025001354-ISUE001-EN). Bitumen inputs are modelled using data from the Eurobitume Life Cycle Assessment 4.0. These datasets have been applied in accordance with EN 15804+A2 and the Circular Ecology Product Category Rules.

Characterisation Factors

Environmental impacts were calculated using the Environmental Footprint impact assessment method version 3.1.

Capital Goods

Emissions associated with capital goods, including buildings, infrastructure, machinery and equipment are not explicitly modelled within the foreground system. However, capital goods remain unedited in any background data sources, e.g. ecoinvent.

Allocation Approach

Allocation was avoided wherever possible through process subdivision. No allocation was required within the foreground system. Background datasets include allocation in accordance with their underlying modelling assumptions.

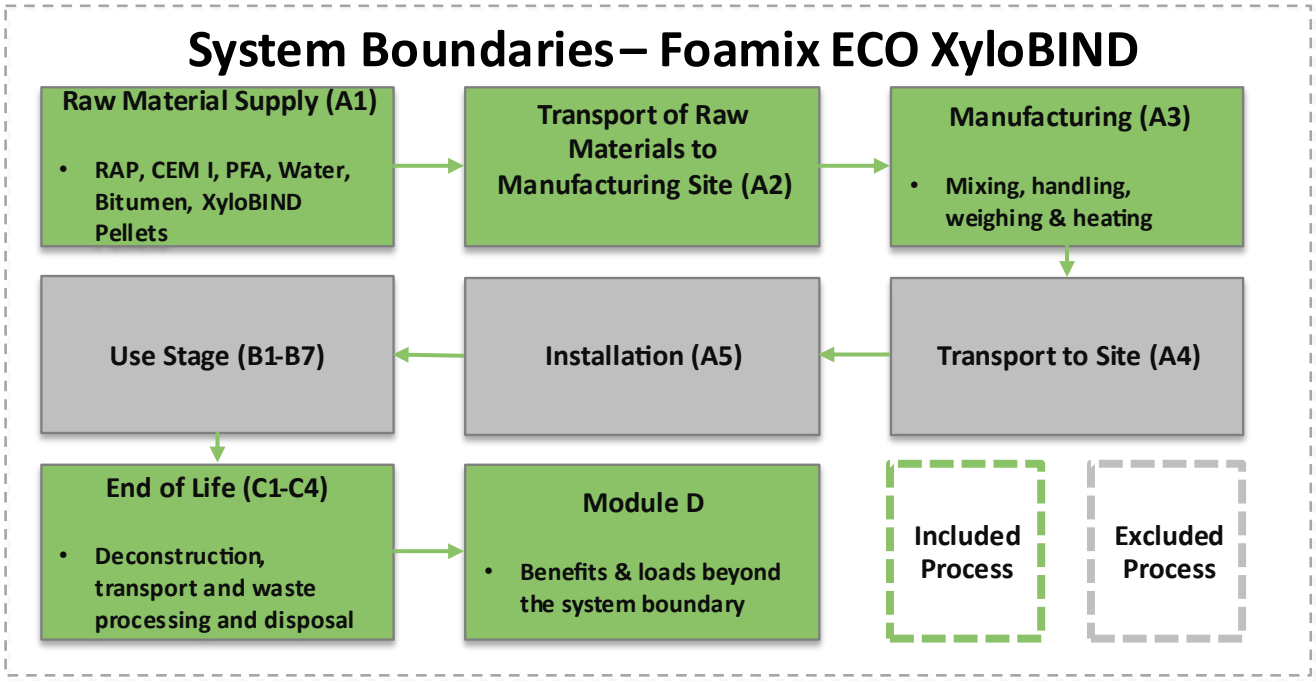
Secondary materials are modelled in accordance with the Circular Ecology Product Category Rules. Pulverised fuel ash (PFA) used in this product is sourced from a historic stockpile and undergoes no heat treatment and is therefore treated as a waste material. No upstream environmental burdens from the original production process are assigned to the PFA. However, impacts associated with transport and any processing or handling required to recover and utilise the material are included within the system boundary.

Description of System Boundaries

This Environmental Product Declaration adopts a cradle to gate with options system boundary. The assessment includes the product stage (Modules A1–A3), the end of life stage (Modules C1–C4) and benefits and loads beyond the system boundary (Module D).

	Product Stage			Construction Stage		Use Stage							End of Life Stage				Benefits & Loads Beyond the System Boundary
	Raw Material Supply	Transport	Manufacturing	Transport	Construction Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction demolition	Transport	Waste Processing	Disposal	Potential Net-Benefits from Reuse, Recycling and/or Energy Recovery
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Module Declared	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	UK	UK	UK	ND	ND	ND	ND	ND	ND	ND	ND	ND	UK	UK	UK	UK	UK

Process Flow Diagram



LCA Results

Core Environmental Impact Indicators – EN 15804 + A2

Results per tonne										
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	-2.96E+01	3.94E+00	1.34E+01	-1.22E+01	2.76E+00	1.58E+00	5.40E+01	7.05E-01	-7.15E+00
GWP-fossil	kg CO_2 eq.	2.88E+01	3.94E+00	1.34E+01	4.62E+01	2.76E+00	1.58E+00	0.00E+00	1.58E-01	-7.07E+00
GWP-biogenic	kg CO_2 eq.	-5.85E+01	2.50E-03	4.29E-02	-5.84E+01	5.58E-04	1.00E-03	5.40E+01	5.47E-01	-8.31E-02
GWP-LULUC	kg CO_2 eq.	3.37E-02	1.47E-03	1.35E-03	3.65E-02	2.82E-04	5.87E-04	0.00E+00	2.31E-05	-4.03E-03
ODP	kg CFC 11 eq.	3.29E-07	8.93E-08	2.79E-07	6.97E-07	4.09E-08	3.57E-08	0.00E+00	3.07E-09	-3.88E-08
AP	mol H^+ eq.	8.98E-02	9.57E-03	9.13E-02	1.91E-01	2.46E-02	3.83E-03	0.00E+00	6.93E-04	-3.76E-02
EP-freshwater	kg P eq.	1.28E-03	3.10E-05	1.61E-04	1.47E-03	9.64E-06	1.24E-05	0.00E+00	8.25E-07	-6.86E-05
EP-marine	kg N eq.	2.90E-02	2.47E-03	3.97E-02	7.12E-02	1.14E-02	9.88E-04	0.00E+00	3.07E-04	-1.05E-02
EP-terrestrial	mol N eq.	3.22E-01	2.73E-02	4.36E-01	7.85E-01	1.25E-01	1.09E-02	0.00E+00	3.01E-03	-1.35E-01
POCP	kg NMVOC eq.	1.18E-01	1.60E-02	1.31E-01	2.65E-01	3.75E-02	6.41E-03	0.00E+00	1.10E-03	-3.98E-02
ADP-M&M	kg Sb eq.	1.87E-05	1.18E-05	1.00E-05	4.04E-05	1.01E-06	4.71E-06	0.00E+00	2.15E-07	-4.77E-05
ADP-fossil	MJ	1.31E+03	5.98E+01	2.02E+02	1.57E+03	3.59E+01	2.39E+01	0.00E+00	2.36E+00	-3.94E+02
WDP	m^3	1.29E+00	3.47E-01	8.99E-01	2.54E+00	9.25E-02	1.39E-01	0.00E+00	1.14E-01	-1.34E+01
Acronyms	*GWP-total: Global Warming Potential; GWP-fossil: Global Warming Potential fossil fuels; 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; EP-freshwater: Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine: Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-terrestrial: Eutrophication potential, Accumulated Exceedance; POCP: Formation potential of tropospheric ozone; ADP-M&M: Abiotic depletion potential for non-fossil resources (minerals and metals); ADP-fossil: Abiotic depletion potential for fossil resources; WDP: Water deprivation potential*									

Use of Natural Resources – EN 15804 + A2

Results per tonne										
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
RPEE	MJ	5.17E+01	9.21E-01	6.78E+00	5.94E+01	2.26E-01	3.69E-01	0.00E+00	6.96E-02	-1.63E+01
RPEM	MJ	5.67E+02	0.00E+00	0.00E+00	5.67E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TPE	MJ	6.24E+02	9.21E-01	6.78E+00	6.32E+02	2.26E-01	3.69E-01	0.00E+00	6.96E-02	-1.63E+01
NRPE	MJ	3.41E+02	5.98E+01	2.02E+02	6.03E+02	3.59E+01	2.39E+01	0.00E+00	2.36E+00	-9.91E+01
NRPM	MJ	9.69E+02	0.00E+00	0.00E+00	9.69E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.94E+02
TRPE	MJ	1.24E+03	5.98E+01	2.02E+02	1.50E+03	3.59E+01	2.39E+01	0.00E+00	2.36E+00	-3.93E+02
SM	kg	9.24E-01	5.43E-02	4.81E-01	1.46E+00	2.05E-02	2.17E-02	0.00E+00	2.04E-03	-1.97E-01
RSF	MJ	7.37E+00	1.16E-02	2.50E-01	7.63E+00	2.13E-03	4.63E-03	0.00E+00	3.00E-04	-3.48E-02
NRSF	MJ	1.13E+01	0.00E+00	0.00E+00	1.13E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
W	m^3	1.16E-01	8.07E-03	2.12E-02	1.46E-01	2.30E-03	3.23E-03	0.00E+00	-4.49E-02	-3.12E-01
Acronyms	*RPEE: Renewable primary energy resources used as energy carrier; RPEM: Renewable primary energy resources used as raw materials; TPE: Total use of renewable primary energy resources; NRPE: Non-renewable primary energy resources used as energy carrier; NRPM: Non-renewable primary energy resources used as materials; TRPE: Total use of non-renewable primary energy resources; SM: Use of secondary materials; RSF: Use of renewable secondary fuels; NRSF: Use of non-renewable secondary fuels; W: Use of net fresh water*									

Waste Indicators – EN 15804 + A2

Results per tonne										
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HW	kg	9.51E-02	6.21E-02	1.63E-01	3.20E-01	3.20E-02	2.49E-02	0.00E+00	4.02E-03	-2.45E-01
NHW	kg	3.11E+00	5.75E-01	1.28E+00	4.97E+00	2.35E-01	2.30E-01	0.00E+00	5.70E+01	-3.16E+00
RW	kg	1.53E-03	1.64E-05	4.37E-04	1.99E-03	3.75E-06	6.58E-06	0.00E+00	9.89E-07	-5.05E-04
Acronyms	*HW: Hazardous waste disposed; NHW: Non-hazardous waste disposed; RW: Radioactive waste disposed*									

Output Flows – EN 15804 + A2

Results per tonne										
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
CR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.80E+02	0.00E+00	0.00E+00
MR	kg	2.24E-01	4.64E-02	4.59E-01	7.29E-01	1.69E-02	1.86E-02	6.10E+02	1.30E-03	-1.58E-01
MER	kg	1.92E-02	0.00E+00	0.00E+00	1.92E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.83E-03
TEE	MJ	3.73E-01	2.02E-02	1.18E+00	1.57E+00	2.46E-03	8.09E-03	0.00E+00	2.04E-02	-2.68E-01
Acronyms	*CR: Components for reuse; MR: Materials for recycling; MER: Materials for energy recovery; TEE: Total exported energy*									

Additional Environmental Impact Indicators – EN 15804 + A2

Results per tonne										
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PM	Disease incidence	ND	ND	ND	ND	ND	ND	ND	ND	ND
IRP	kBq U235 eq.	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETP-fw	CTUe	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-c	CTUh	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-nc	CTUh	ND	ND	ND	ND	ND	ND	ND	ND	ND
SQP	Dimensionless	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acronyms	*PM: Particulate matter emissions; IRP: Ionising radiation, human health; ETP-fw: Ecotoxicity (freshwater); ETP-c: Human toxicity, cancer effects; HTP-nc: Human toxicity, non-cancer effects; SQP: Land use related impacts / soil quality*									

More Information

Net & Gross GWP Reporting

The GWP results represent Net GWP, where the EPD used for the cement production was on the basis of net GWP reporting (IBU-CEI-HOL-2203120-UK2025001354-ISUE001-EN).

Packaging GWP Reporting

No packaging is used for Foamix Eco™.

Data Quality

Primary data is representative of Foamix Eco™ production from a static facility during the 2025 calendar year. Secondary datasets were selected based on geographic relevance, temporal representativeness and consistency with EN 15804+A2 and the Circular Ecology Product Category Rules. Data quality has been assessed in line with Section 5.8 of the Circular Ecology PCR and is documented in the background LCA report.

Data quality has been assessed in accordance with EN 15804+A2 Annex E (Table E.1) and EN 15941 Chapter 7.1. All datasets used in the LCA model have been evaluated against the data quality indicators defined in Annex E, including technological, geographical and temporal representativeness. Datasets are described qualitatively in accordance with the categories defined in Table E.1.

Primary data collected from the manufacturer for the reference year is considered to be of very good to good quality. Secondary data sourced from recognised databases is considered representative and of good to fair quality. No datasets classified as poor or very poor have been identified as significantly influencing the results. Where relevant, third-party Environmental Product Declarations (EPDs) have been used as data sources and are referenced within the LCA documentation.

Product Averages & Product Families

This EPD represents a single specific product. No product averaging or product family methodology has been applied.

Manufacturing Site Variability

Primary manufacturing data has been collected from two static production facilities located at Micheldever, Hampshire (SO21 3BB) and Croft, Leicestershire (LE9 3GP). A production-weighted average has been applied based on site-specific output volumes to derive representative results for Modules A1–A3.

To assess the variability associated with this approach, a comparison of total A1–A3 GWP results for each site against the weighted average has been undertaken. The results are presented below:

Site Location	A1-A3 GWP Total (kg CO_2e/tonne)	Deviation from Average (%)
Micheldever, Hampshire, UK	-11.08	+9.28
Croft, Leicestershire, UK	-14.14	-15.81

Additional Environmental Information

The product does not contain any substances listed on the REACH Candidate List of Substances of Very High Concern above 0.1% by weight. No other hazardous substances requiring declaration are present.

Additional Information

Energy Mix

Energy inputs for the production of Foamix™ and Foamix Eco™ at static manufacturing facilities comprise a combination of diesel and grid electricity, depending on site configuration. The Croft facility operates using diesel only, while the Micheldever facility utilises both diesel and grid electricity to power equivalent manufacturing processes.

Diesel consumption is modelled using the market for diesel, burned in building machine dataset from ecoinvent v3.11. Electricity consumption is modelled using the electricity, medium voltage, residual mix {GB} dataset from ecoinvent v3.11, in line with a market-based approach where supplier-specific data is not applied.

Process Emissions

Process emissions are not a significant source of environmental impact for the mobile production of Foamix Eco™ and are therefore not modelled explicitly as foreground processes.

Where relevant, process emissions associated with fuel combustion, electricity generation, transport activities and waste management are included within the applied background datasets, as represented in the ecoinvent database v3.11.

No additional assumptions or exclusions relating to process emissions have been applied beyond those inherent in the background datasets.

Scenario Modelling Information

Module	Parameter	Value	Data Source/Reference
C1	Demolition Fuel Consumption (litres/tonne)	0.77 litres per tonne	TNO & NMD Consortium, 2020. *Bepalingsmethode voor asfaltmengsels – NMD achtergrondrapport*. Table 14: *Dieselverbruik en NMD-proceskaarten gebruikt voor de modellering van asfaltverwijderingssets (1000 ton/dag scenario)*. Netherlands Organisation for Applied Scientific Research (TNO).
C2	Waste Transport Distance (km)	15.5 km	Qflow. (2023). The UK Construction Industry Waste Report 2023. Qflow. Page 16.
C3/C4	Waste Processing & Disposal Route Split (%)	1% Landfill, 38% Reuse, 61% Recycled	European Asphalt Pavement Association (EAPA), 2023. Asphalt in Figures. Brussels: EAPA. Available from: https://eapa.org/asphalt-in-figures/

For Module D, 38% of the recovered material is assumed to be reused in new asphalt mixtures as reclaimed asphalt pavement (RAP), while 61% is assumed to be recycled for use as foundation or sub-base material. For the proportion reused in asphalt production, the reclaimed material is assumed to substitute virgin aggregate and bitumen in future bituminous mixtures. An 80% binder substitution factor has been applied, representing the proportion of residual aged binder assumed to effectively replace virgin bitumen in new asphalt production.

The reported Module D results therefore represent the avoided burdens associated with the substitution of virgin aggregate and bitumen in asphalt production, as well as the displacement of virgin aggregates when the material is recycled for use as foundation material, calculated in accordance with EN 15804+A2.

Biogenic Carbon

Parameter	Unit			
	kgC per tonne	**kgCO_2e per tonne**	**kgC per kg**	**kgCO_2e per kg**
Total Biogenic Carbon Content in Product	14.88	54.56	0.015	0.055
Total Biogenic Carbon Content in Packaging	0.00	0.00	0.00	0.00
1 kg of biogenic carbon is equivalent to the uptake of 44/12 kg of CO_2e				

Biogenic carbon contained within the product is accounted for in accordance with the −1/+1 approach. Biogenic carbon stored within materials is assumed to be released to the atmosphere at the end of life, with releases modelled in Module C3 for materials sent for reuse, recovery or recycling, and in Module C4 for materials sent to final disposal. No permanent carbon storage beyond the system boundary is assumed.

References

Circular Ecology (2025) — *General Programme Instructions Version 1.0.* Circular Ecology

Circular Ecology (2025) — *Product Category Rules for Construction & Building Sector – Version 1.0*. Circular Ecology

Circular Ecology (2026) — *EN 15804 Life Cycle Assessments of XyloBIND E10, E20, ME50 & M80 Bio Based Materials for Gautam Zen*. Circular Ecology, prepared for Gautam Zen.**Ecoinvent (2024)** — *Ecoinvent V3.11*. Swiss Centre for Life Cycle Inventories. Available from www.ecoinvent.ch

ECO Platform LCA Calculation Rules: Version 2.0 (2024) — *LCA Calculation Rules and Specifications for EPDs*. ECO Platform.

EN 15804:2012+A2:2019 — *Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.* European Committee for Standardization (CEN).

EN 15941:2010 — *Sustainability of construction works – Environmental product declarations – Methodology for selection and use of generic data.* European Committee for Standardization (CEN)

Eurobitume (2025) — *Life Cycle Assessment 4.0 for Bitumen.* Brussels: Eurobitume. Available at: https://eurobitume.eu/wp-content/uploads/2025/03/EB-LCA-4.0-2025.pdf

Holcim UK (2025) — *Environmental Product Declaration: Portland Cement (CEM I grey 52,5 N), produced at the Cauldon plant*. Institut Bauen und Umwelt e.V. (IBU). EPD Registration Number: IBU-CEI-HOL-2203120-UK2025001354-ISUE001-EN

ISO 14025:2006 — *Environmental labels and declarations – Type III environmental declarations – Principles and procedures.* International Organization for Standardization

ISO, 2006a — *Environmental management – life cycle assessment – principles and framework*. International Standards Organization, Second Edition, EN ISO 14040

ISO, 2006b — *Environmental management – life cycle assessment – requirements and guidelines*. International Standards Organization, EN ISO 14044

TNO & NMD Consortium (2020) — *Bepalingsmethode voor asfaltmengsels – NMD achtergrondrapport*. Table 14: *Dieselverbruik en NMD-proceskaarten gebruikt voor de modellering van asfaltverwijderingssets (1000 ton/dag scenario)*. Netherlands Organisation for Applied Scientific Research (TNO)