ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN15804+A2

Cemfloor

Owner of the declaration:
McGraths Limestone (Cong) Ltd.

Product:
Cemfloor

Declared unit:
1 tonne

This declaration is based on Product Category Rules:
EN 15804:2012+A2:2019, EPD Ireland PCR Part A, Version 2.1, 2022
PCR - Part A Implementation and use of I.S. EN 15804:2012+A1 and + A2, and CEN TR 16970:2016 in Ireland for the development of Environmental Product Declarations (issued 17.08.2021), Version 2.0

Program operator:
EPD Ireland

Declaration number:
EPDIE-26-325

Issue date:
15.05.2026

Valid to:
14.05.2031

General information

Product

Cemfloor

Owner of the declaration:

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Program operator:

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Manufacturer:

McGraths Limestone (Cong) Ltd.

Declaration number:

EPDIE-26-325

Place of production:

McGraths Limestone (Cong) Ltd.
Cregaree, Cong, Co mayo
F31 W425 Cong, Ireland

This declaration is based on Product Category Rules:

EN 15804:2012+A2:2019, EPD Ireland PCR Part A, Version 2.1, 2022 PCR - Part A Implementation and use of I.S. EN 15804:2012+A1 and + A2, and CEN TR 16970:2016 in Ireland for the development of Environmental Product Declarations (issued 17.08.2021), Version 2.0

Statement of liability:

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

Type of EPD

Specific product EPD

Issue date:

15.05.2026

Declared unit:

1 tonne Cemfloor

Valid to:

14.05.2031

Scope of the EPD:

A1-A3

Year of study:

2025

Functional unit:

I tonne of Cemfloor binder

Comparability:

Environmental Product Declarations from different programmes may not be directly 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

LCA consultant or person responsible for LCA:
EcoReview, Peter Seymour

Verification:

Independent verification of the declaration and data, according to ISO14025:2010

Approved:

SIGNATURE OF PROGRAMME OPERATOR

Third party verifier:
Kim Allbury

Pat Barry, CEO - Irish Green Building Council

Product

Product description:

Cemfloor binder is a specialised dry powder additive designed to enhance cement-based floor screeds. It consists primarily of finely ground, high-purity calcium carbonate and blended with a proprietary hydraulic activator to create a free-flowing, self-compacting screed when mixed on-site with cement, suitable sand, and water. This formulation complies with EN 12620:2013 for aggregates in concrete and supports screeds meeting EN 13813.

The binder achieves self-levelling floors by eliminating segregation, bleed water, and excessive shrinkage, while boosting flowability, thermal conductivity, and finishing qualities. Ideal for domestic renovations, commercial spaces, and light industrial settings, it excels in bonded, un-bonded, or floating applications over concrete substrates. Cemfloor screeds are particularly suited for underfloor heating systems due to minimal thickness requirements (e.g., 25mm cover over pipes) and rapid drying—foot traffic possible in 24 hours. Its use shortens construction times by enabling thinner sections (domestic min. 35mm, commercial 40mm) and up to 70% weight reduction versus traditional sand-cement screeds. This enables efficient underfloor heating integration, wet rooms, and high-traffic polished finishes (SR2 flatness), promoting sustainable construction with reduced material use and faster timelines.

Product specification:

Cemfloor binder is a blend of some 80-90% finely milled calcium carbonate with a proprietary hydraulic binder, Adcem from Chryso. It is produced to EN 12620:2013 standards for concrete aggregates. When mixed on-site (binder + cement + sand + water), it yields high-performance screeds compliant with EN 13813:2002 and BS 8204-7:2003 for pumpable self-levelling applications.

Key specification: minimum thicknesses: bonded 20mm, un-bonded 30mm, floating domestic 35mm/commercial 40mm, with 25mm cover over underfloor heating pipes. Bay sizes limited to 100m² (non-heated) or 50m² (heated). Flow rate up to 250mm ensures self-levelling without vibration. It must be installed by approved contractors using specialist pumps, following substrate preparation per BS 8204-7. No packaging required as is supplied as a bulk powder, stored in silos.

Technical data:

Cemfloor binder produces screeds with compressive strength of 20-30 N/mm² (CT-C20/30) and flexural strength of 4-6 N/mm² (F4/6), achieving SR2 surface regularity for precision floor coverings.

Key performance characteristics include flow diameter of 220-250mm, ensuring pumpable self-compacting application without mechanical compaction. Drying profile enables foot traffic loading after 24 hours and full mechanical loading within 4-5 days at 20°C/50% RH. Thermal conductivity of 1.8-2.2 W/mK optimises underfloor heating performance with minimal screed thickness over heating pipes.

Shrinkage is limited to <0.05% linear, preventing crack formation even in large bay areas. Bond strength exceeds 1.5 N/mm² on prepared concrete substrates, eliminating priming requirements. Screed density ranges 1900-2000 kg/m³, providing 70% weight saving versus traditional sand/cement mixes while maintaining equivalent load-bearing capacity.

Fire resistance classification A1 per EN 13501-1 ensures non-combustible performance. Acoustic impact sound reduction reaches 32-36 dB for floating applications over 100mm separating floors. Abrasion resistance meets AR0.5 classification for light industrial traffic, supporting polished concrete finishes without additional protection.

Shrinkage is minimised (<0.05%), preventing cracking, and segregation and bleed water is eliminated to achieve superior surface finish. Service life exceeds 50 years, matching building design life when properly installed over prepared concrete substrates per BS 8204-7:2003.

Market/Geographical Area:

Republic of Ireland and United Kingdom

Reference service life, product

No reference service life is indicated, however the service life is likely to exceed 50 years, matching building design life when properly installed over prepared concrete substrates per BS 8204-7:2003.

Reference service life, building or construction works

LCA: Calculation rules

Declared unit:

1 tonne Cemfloor

kg per Declared unit 1000

Cut-off criteria:

All relevant inputs and outputs - like emissions, energy and materials - have been taken into account in this LCA, and in accordance with EN15804+A2:2019. The study covers at least 95% of the materials and energy per module and at least 99% of the total use of materials and energy of each unit process. Long term emissions have been excluded from the study.

Allocation:

The measurement of environmental impacts in this EPD uses the LCIA methodologies recommended for PEF 3.1. In this EPD, the waste processes are allocated in the relevant module. In the case of the use of secondary materials or energy recovered from secondary fuels, the system boundary between the system under study and the previous system (providing the secondary materials) is set where outputs of the previous system, e.g. materials, products, building elements or energy, reach the end-of-waste state. The modularity and the polluter payer principles have been followed.

Data quality:

Data quality level and criteria used for this data quality assessment are based on Table E.1 of Annex E, EN 15804. Data sources are Ecoinvent version 3.11 (released November 2024), and the product-specific EPD for Adcem covering production year 2024 (issued 2025).

Time Representativeness
In this LCA the data relating to the manufacturing of the Cemfloor product and the data relating to the background processes for environmental impacts are recent (<2 years). The records for the supplier of the Adcem is for the production year of 2024, for which the EPD has been published in 2025.
Time Representativeness is considered to be Very good.

Geographical Representativeness
The processes used in the production of the Cemfloor are geographically representative, insofar as the production location lies within the region for which the relevant Ecoinvent (version 3.11) environmental records have been selected. In addition, the modelling of the Cemfloor is carried out on the actual calcium carbonate material produced on-site, and the specific Adcem raw material.
Geographical Representativeness is considered to be Very good.

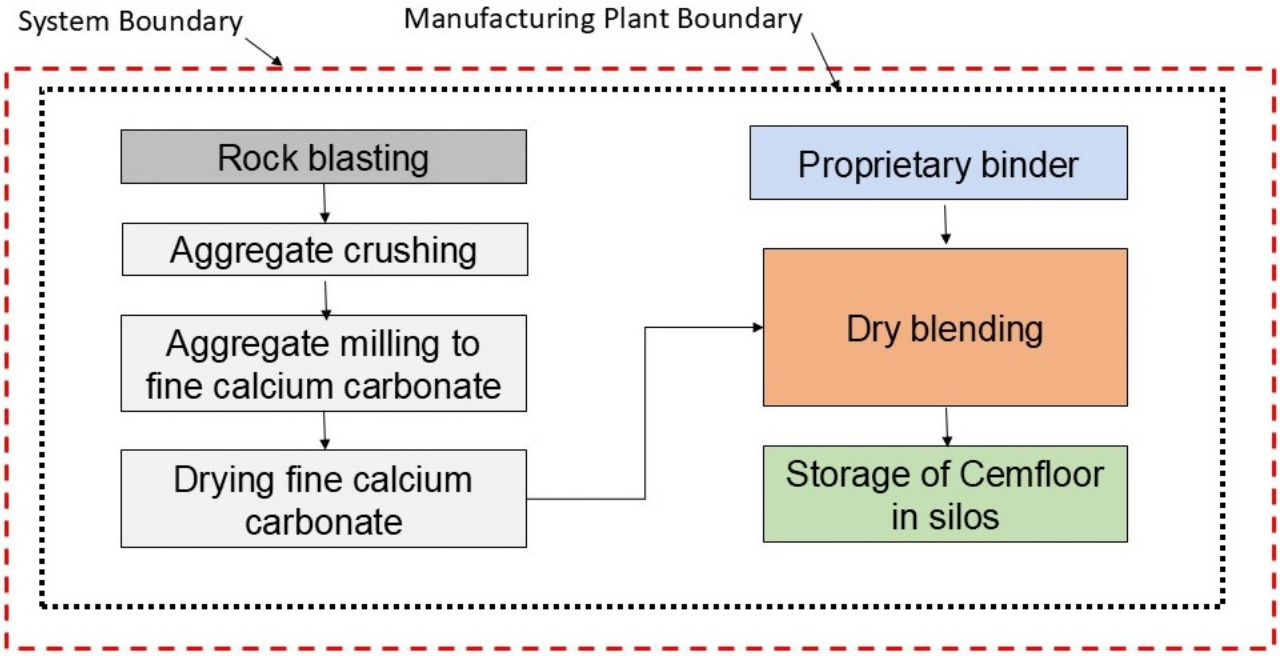
Technical Representativeness
Processes and energies used in the process have been modelled exactly as described by the manufacturer and are based directly on the production data supplied in relation to processes, fuels used, and without any significant need for improvement. The records for the supplier of the Adcem are from the specific product EPD thus they are the most technically representative available.
Technical Representativeness is considered to be Very good.

Scope and type of EPD (X = Module declared; ND = Module not declared)

Product stage			Construction installation stage		Use stage							End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

System boundary:

This LCA covers the Product Stages A1, A2 and A3 as indicated above. This is termed: "Cradle to gate".



Additional technical information:

Electricity modelling
Electricity is supplied from the grid, and is 100% renewable (wind, onshore). The LCA has calculated the electricity impact based on the market-based approach. The CO2 intensity of the electricity is 0.033 kg CO2eq per kWh.

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environmental impact			
Indicator		Unit	A1-A3
	GWP-total	kg CO_2 -eq	2.82E+02
	GWP-fossil	kg CO_2 -eq	2.81E+02
	GWP-biogenic	kg CO_2 -eq	8.22E-02
	GWP-luluc	kg CO_2 -eq	1.42E+00
	ODP	kg CFC11 -eq	4.62E-06
	AP	mol H+ -eq	1.31E+00
	EP-FreshWater	kg P -eq	9.21E-03
	EP-Marine	kg N -eq	3.47E-01
	EP-Terrestial	mol N -eq	3.74E+00
	POCP	kg NMVOC -eq	1.40E+00
	ADP-minerals&metals[1]	kg Sb-eq	1.46E+03
	ADP-fossil[1]	MJ	1.99E+03
	WDP[1]	m^3	5.69E+01

GWP-total = Global Warming Potential total; 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 marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

Remarks on environmental impacts

Additional environmental impact indicators			
Indicator		Unit	A1-A3
	PM	Disease incidence	1.84E-05
	IRP[2]	kgBq U235 -eq	2.86E+00
	ETP-fw[1]	CTUe	1.10E+03
	HTP-c[1]	CTUh	4.20E-07
	HTP-nc[1]	CTUh	2.06E-06
	SQP[1]	dimensionless	1.03E+03

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Potential Soil Quality Index (dimensionless)

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator
2. 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.

Resource use			
Indicator		Unit	A1-A3
	PERE	MJ	9.02E+02
	PERM	MJ	4.98E+01
	PERT	MJ	9.52E+02
	PENRE	MJ	3.36E+03
	PENRM	MJ	2.40E+02
	PENRT	MJ	3.60E+03
	SM	kg	2.49E-02
	RSF	MJ	0.00E+00
	NRSF	MJ	0.00E+00
	FW	m^3	1.58E+00

PERE = Use of renewable primary energy excluding renewable primary energy resources 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 resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

End of life - Waste			
Indicator		Unit	A1-A3
	HWD	kg	5.74E-02
	NHWD	kg	8.00E+01
	RWD	kg	1.93E-03

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

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

End of life - Output flow			
Indicator		Unit	A1-A3
	CRU	kg	0.00E+00
	MFR	kg	2.28E-01
	MER	kg	0.00E+00
	EEE	MJ	6.54E-04
	EET	MJ	0.00E+00

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

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

Biogenic Carbon Content		
Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	0.00E+00

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2

Additional requirements

Dangerous substances

None of the substances contained in the product are listed in the “Candidate List of Substances of Very High Concern for authorisation”, or they do not exceed the limit for registration with the European Chemicals Agency.

Mandatory additional information on release of dangerous substances to indoor air, soil and water.

Bibliography

[1] ISO 14040: Environmental management - Life cycle assessment – Principles and Framework', International Organization for Standardization, ISO14040:2006.
[2] ISO 14044: Environmental management - Life cycle assessment - Requirements and guidelines', International Organization for Standardization, ISO14044:2006.
[3] ISO 14025: Environmental labels and declarations -- Type III environmental declarations -Principles and procedures', International Organization for Standardization, ISO14025:2006.
[4] EN 15804:2012+A2:2019: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products EN 15804:2012+A2:2019.
[5] Product Category Rules: Part A, Implementation and use of EN 15804:2012+A2:2019 and CEN TR 16970:2016 in Ireland for the development of Environmental Product Declarations; Version 2.0, issue date: 17.08.2021, published by the EPD Ireland Programme operator (Irish Green Building Council).
[6] https://eplca.jrc.ec.europa.eu/LCDN/developerEF.html.
[7] PEF methodology final draft.pdf (europa.eu).

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