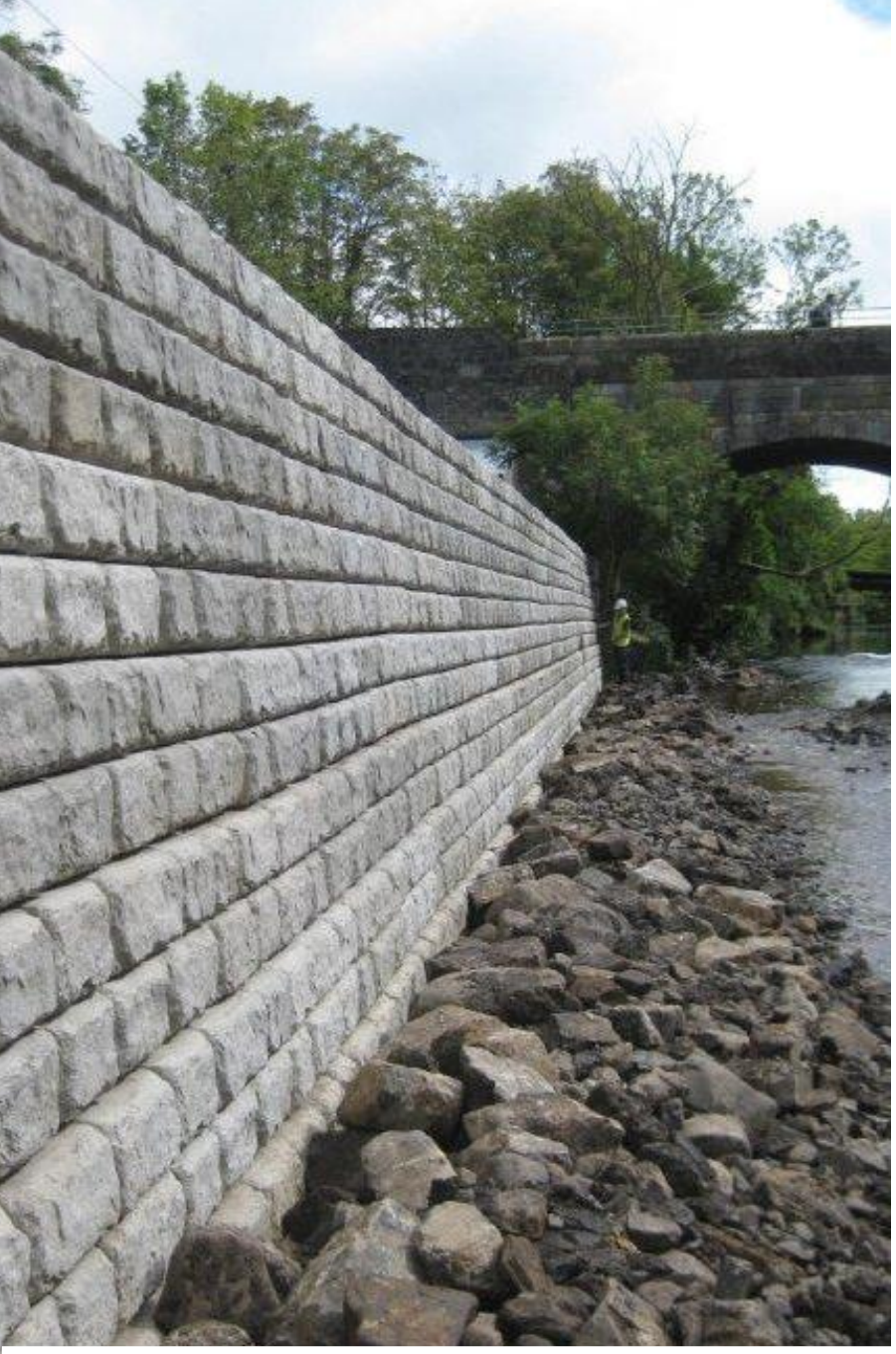


ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2:2019 and ISO 14025

Redi-Rock Retaining Wall Units
Marshalls Plc

EPD HUB, HUB-3929
Published on 09.09.2025, last updated on 19.09.2025, valid until 08.09.2030

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.1 (5 Dec 2023) and JRC characterization factors EF 3.1.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Marshalls Plc
Address	Landscape House, Premier Way, Elland HX5 9HT, England, UK
Contact details	epd@marshalls.co.uk
Website	www.marshalls.co.uk

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.1 (5 Dec 2023) EN 16757 Product Category Rules for concrete and concrete elements
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-B1, and modules C1-C4, D
EPD author	M Edwards - Marshalls PLC
EPD verification	Independent verification of this EPD and data, according to ISO 14025: o Internal verification þ External verification
EPD verifier	HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	Redi-Rock Retaining Wall Units
Place(s) of raw material origin	United Kingdom
Place of production	Pollington, South Yorkshire (UK)
Place(s) of installation and use	United Kingdom
Period for data	Calendar year 2024
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	N/A
A1-A3 Specific data (%)	92,7

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit (1040 series Middle Block)
Declared unit mass	1066 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	1,50E+02
GWP-total, A1-A3 ($kgCO_2e$)	1,50E+02
Secondary material, inputs (%)	18,3
Secondary material, outputs (%)	93,7
Total energy use, A1-A3 (kWh)	269
Net freshwater use, A1-A3 (m^3)	0,22

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Marshalls is the UKs largest manufacturer and supplier of building and hard landscaping products, including paving blocks and flags, kerbs, drainage channels, walling systems, bricks, roof tiles, street furniture and natural stone paving. It provides products for both commercial and domestic markets.

PRODUCT DESCRIPTION

Marshalls Redi-Rock™ modular wall system is an ingenious, space-saving solution for the retention of the earth for a wide range of retaining, force protection, landscaping and flood protection applications. Redi-Rock™ is an engineered retaining wall system that is attractive, easy to install, and will stand the test of time.

Marshalls is the exclusive manufacturer of Redi-Rock™ retaining walls within mainland UK – England, Scotland, and Wales. A variety of retaining wall blocks are available in BIM (Building Information Modelling), which is now a requirement for all government construction projects.

The modular design is perfect for building a retaining wall with concrete blocks that need to stand the test of time, offering flood protection, reinforcement, retention, security and peace of mind.

Redi-Rock retaining wall units are manufactured according to EN 15258-2008, which requires the strength of the concrete to be above 40N/mm² at 28 days. Other factors which must be satisfied to achieve the standard include freeze/thaw performance and water absorption. Test methods and minimum criteria are detailed in the Standard and Factory Production Control documents.

The data contained within this document is based on 1 no. 1040 series Middle Block - Nominal dimensions 1170mm (tapers to 930mm) x 460mm x 1040mm (w x h x d) , Density 2300kg/m3

Conversion factors for different units are listed in the document.

Further information can be found at: www.marshalls.co.uk

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0,3	UK
Minerals	99,7	UK

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 unit (1040 series Middle Block)
Mass per declared unit	1066 kg
Functional unit	-
Reference service life	50 years

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	x	x	MND	MND	MND	MND	MND	MND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

A market-based approach is used in modelling the electricity mix utilised in the factory.

Redi-Rock is manufactured from self-compacting concrete. A pre-defined blend of cement, aggregate, water and admixture is emptied into a hopper. The mixture is mixed in a concrete mixer before being loaded into another hopper. Cleaned moulds are fitted with small steel lifting loops to be cast into the concrete. The concrete is gravity fed from the hopper into prepared moulds.

Filled moulds are left in to cure in a covered, indoor environment. Once the product has achieved strength (usually 16-18 hours) the moulds are manually removed from the product. The product is then crane lifted using lifting loops and individual units are moved to the storage yard via forklift truck.

Any water lost during manufacture is recycled - collected and reintroduced to the mix. Material waste during manufacturing is calculated at approximately 8% and has been considered in this EPD. The use of green energy in manufacturing is demonstrated through contractual instruments (REGO), and its use is ensured throughout the validity period of this EPD.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

A4: During the time period measured, manufacture of Redi-Rock took place at one UK site: Pollington. Transport to site or yard is

undertaken by articulated lorries with Euro 6 engines. We have calculated that the weighted average journey undertaken by these products from manufacturing site to installation site during the time-period allocated was 148.2km.

A5: Installation will be by crane or other lifting plant. The installation process consumes energy in the form of diesel fuel used by building machines. Energy consumption of an installation process is on the average 0.01 kWh/kg (Bozdağ, Ö & Seçer, M. 2007). Therefore, energy consumption installation is assumed to be 10.66 kWh for each 1.066 tonne unit. The source of energy is diesel fuel used by work machines.

PRODUCT USE AND MAINTENANCE (B1-B7)

B1: The carbonation (sequestration) value has been calculated as per methodology outlined in EN 16757:2022.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

C1: Redi Rock is demolished with heavy plant. The demolition process consumes energy in the form of diesel fuel used by building machines. Energy consumption of a demolition process is on the average 10 kWh/m2 (Bozdağ, Ö & Seçer, M. 2007). Therefore, energy consumption demolition is assumed to be 10 kWh/1000 kg = 0,01 kWh/kg. The source of energy is diesel fuel used by work machines.

C2: It is assumed that 6% of product is transported 35km to a waste processing site to be landfilled, and 94% of product is transported 125km to be reprocessed for re-use. This is evidenced on UK Governments Statistics on Construction Waste website:

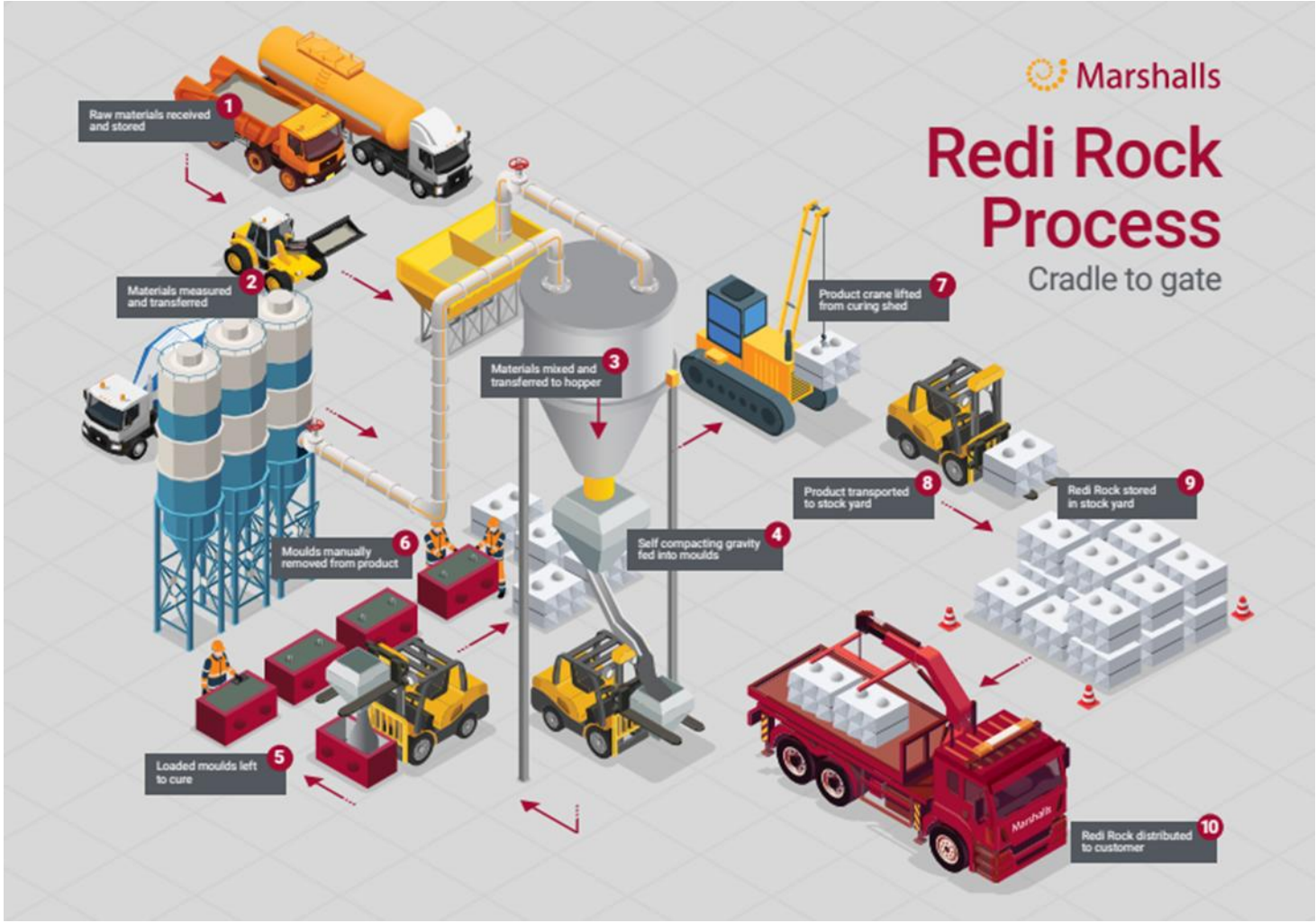
7. Recovery rate from non-hazardous construction and demolition (C&D) waste - Table 8: England, 2010–2020: https://www.gov.uk/government/statistics/uk-waste-data/uk-statistics-on-waste#recovery-rate-from-non-hazardous-construction-and-demolition-cd-waste

C3: All material (whether used on site or treated at a waste processing facility) will be crushed.

C4: It is assumed that 6% of material will go to landfill.

D: Due to the recycling potential of concrete, it can be used as secondary raw material, which avoids the use of virgin raw materials. The 94% of concrete going to waste processing is converted into secondary raw materials after recycling. The benefit of recycled concrete claimed in module D has excluded the amount of secondary material input.

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process that is more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

All industrial processes from raw material acquisition and pre-processing, production, product distribution and installation, and end-of-life management are included. For easier modelling and because of lack of accuracy in available modelling resources many constituents under 0,1% of product mass are excluded. These include some concrete admixtures which are all present in the product only in very small amounts and have no serious impact on the emissions of the product. Further, water used for cleaning and maintenance of the equipment, transportation and waste streams of the packaging materials used for delivering the raw materials to the factory are omitted since the quantified mass contribution is less than 0.1%.

The production of capital equipment, construction activities, and infrastructure, personnel-related activities, energy and water use related to company management and sales activities are excluded.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are made according to the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	Not applicable
Ancillary materials	Not applicable
Manufacturing energy and waste	Allocated by mass or volume

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	Not applicable

Primary data represents the Marshalls site at which Redi-Rock is manufactured. All products covered by this EPD use the same mix design with only minor differences in natural pigmentation.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	1,27E+02	6,46E+00	1,67E+01	1,50E+02	1,70E+01	4,08E+00	-5,01E-01	MND	MND	MND	MND	MND	MND	0,00E+00	2,46E+01	4,37E+00	3,98E-01	-1,07E+01
GWP – fossil	kg CO_2e	1,27E+02	6,46E+00	1,63E+01	1,50E+02	1,70E+01	4,08E+00	-5,01E-01	MND	MND	MND	MND	MND	MND	0,00E+00	2,46E+01	4,37E+00	3,98E-01	-1,06E+01
GWP – biogenic	kg CO_2e	1,63E-01	1,46E-03	3,46E-01	5,11E-01	0,00E+00	2,73E-04	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	4,87E-03	-4,46E-04	-1,27E-04	-1,01E-02
GWP – LULUC	kg CO_2e	4,28E-02	2,89E-03	2,66E-03	4,83E-02	7,61E-03	5,56E-04	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	8,69E-03	4,48E-04	2,28E-04	-9,62E-03
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	1,55E-06	9,54E-08	2,33E-07	1,87E-06	2,51E-07	6,22E-08	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	4,89E-07	6,69E-08	1,15E-08	-8,29E-08
Acidification potential	mol H^+e	3,70E-01	2,20E-02	1,42E-01	5,34E-01	5,80E-02	3,61E-02	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	7,69E-02	3,95E-02	2,82E-03	-6,50E-02
EP-freshwater[2)]	kg Pe	1,61E-02	5,03E-04	8,23E-02	9,89E-02	1,32E-03	1,70E-04	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	1,63E-03	1,26E-04	3,27E-05	-3,24E-03
EP-marine	kg Ne	1,05E-02	7,24E-03	6,07E-02	7,85E-02	1,90E-02	1,65E-02	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	2,59E-02	1,83E-02	1,08E-03	-1,54E-02
EP-terrestrial	mol Ne	1,16E+00	7,88E-02	6,71E-01	1,91E+00	2,07E-01	1,80E-01	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	2,82E-01	2,00E-01	1,17E-02	-1,86E-01
POCP ("smog")[3)]	kg NMVOCe	3,05E-01	3,25E-02	2,03E-01	5,40E-01	8,55E-02	5,40E-02	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	1,20E-01	5,98E-02	4,21E-03	-5,16E-02
ADP-minerals & metals[4)]	kg Sbe	1,08E-04	1,80E-05	1,06E-05	1,36E-04	4,74E-05	7,01E-06	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	8,04E-05	1,57E-06	6,32E-07	-5,69E-05
ADP-fossil resources	MJ	4,77E+02	9,37E+01	2,09E+02	7,79E+02	2,47E+02	5,36E+01	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	3,45E+02	5,72E+01	9,77E+00	-1,28E+02
Water use[5)]	m^3e depr.	8,06E+00	4,63E-01	6,33E-01	9,15E+00	1,22E+00	1,54E-01	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	1,70E+00	1,43E-01	2,82E-02	-1,59E+01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. 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 the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	2,62E-06	6,47E-07	3,78E-06	7,04E-06	1,70E-06	1,01E-06	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	1,93E-06	8,55E-06	6,42E-08	-9,87E-07
Ionizing radiation[6)]	kBq U235e	9,98E-01	8,17E-02	1,45E-01	1,22E+00	2,15E-01	3,23E-02	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	4,40E-01	2,53E-02	6,14E-03	-8,97E-01
Ecotoxicity (freshwater)	CTUe	6,08E+01	1,33E+01	1,60E+01	9,01E+01	3,49E+01	3,69E+00	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	4,53E+01	3,15E+00	8,19E-01	-3,05E+01
Human toxicity, cancer	CTUh	3,11E-07	1,07E-09	2,05E-09	3,14E-07	2,81E-09	4,87E-10	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	4,19E-09	4,49E-10	7,34E-11	-2,84E-09
Human tox. non-cancer	CTUh	1,13E-05	6,07E-08	4,04E-08	1,14E-05	1,60E-07	1,20E-08	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	2,17E-07	7,12E-09	1,69E-09	-8,30E-08
SQP[7)]	-	9,70E+02	9,44E+01	3,43E+01	1,10E+03	2,49E+02	6,92E+00	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	2,05E+02	4,01E+00	1,92E+01	-1,20E+02

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	1,03E+02	1,28E+00	3,21E+00	1,08E+02	3,38E+00	5,30E-01	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	5,97E+00	3,62E-01	9,43E-02	-1,16E+01
Renew. PER as material	MJ	8,85E-02	0,00E+00	-6,55E-03	8,19E-02	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-7,70E-02	-4,91E-03	0,00E+00
Total use of renew. PER	MJ	1,03E+02	1,28E+00	3,21E+00	1,08E+02	3,38E+00	5,30E-01	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	5,97E+00	2,85E-01	8,94E-02	-1,16E+01
Non-re. PER as energy	MJ	4,83E+02	9,38E+01	2,09E+02	7,85E+02	2,47E+02	5,36E+01	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	3,45E+02	5,72E+01	9,77E+00	-1,28E+02
Non-re. PER as material	MJ	4,37E+00	0,00E+00	-3,24E-01	4,05E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-3,80E+00	-2,43E-01	0,00E+00
Total use of non-re. PER	MJ	4,87E+02	9,38E+01	2,09E+02	7,90E+02	2,47E+02	5,36E+01	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	3,45E+02	5,34E+01	9,53E+00	-1,28E+02
Secondary materials	kg	1,95E+02	3,99E-02	8,70E-02	1,95E+02	1,05E-01	2,31E-02	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	1,58E-01	2,38E-02	2,46E-03	-1,42E-01
Renew. secondary fuels	MJ	7,56E+01	5,07E-04	8,63E-04	7,56E+01	1,33E-03	1,23E-04	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	2,00E-03	6,21E-05	5,08E-05	-9,82E-04
Non-ren. secondary fuels	MJ	7,02E-02	0,00E+00	0,00E+00	7,02E-02	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	1,90E-01	1,39E-02	1,71E-02	2,21E-01	3,65E-02	4,22E-03	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	4,65E-02	3,78E-03	1,02E-02	-3,78E-01

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	3,67E+00	1,59E-01	3,28E-01	4,16E+00	4,18E-01	6,63E-02	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	4,95E-01	6,37E-02	1,08E-02	-9,97E-01
Non-hazardous waste	kg	4,04E+01	2,94E+00	5,46E+00	4,88E+01	7,74E+00	1,07E+00	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	1,05E+01	8,68E-01	2,47E-01	-1,78E+01
Radioactive waste	kg	7,59E-04	2,00E-05	4,54E-05	8,24E-04	5,26E-05	8,02E-06	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	1,09E-04	6,21E-06	1,50E-06	-2,16E-04

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	1,85E-01	0,00E+00	0,00E+00	1,85E-01	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	3,83E-05	0,00E+00	8,53E+01	8,53E+01	0,00E+00	3,18E+00	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	9,99E+02	0,00E+00	0,00E+00
Materials for energy rec	kg	1,02E-13	0,00E+00	0,00E+00	1,02E-13	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	1,39E+02	6,42E+00	1,66E+01	1,62E+02	1,69E+01	4,06E+00	-5,01E-01	MND	MND	MND	MND	MND	MND	0,00E+00	2,44E+01	4,35E+00	3,94E-01	-1,06E+01
Ozone depletion Pot.	kg CFC-$_{11}$e	8,15E-07	7,61E-08	1,85E-07	1,08E-06	2,00E-07	4,93E-08	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	3,89E-07	5,30E-08	9,16E-09	-6,99E-08
Acidification	kg SO_2e	2,59E-01	1,68E-02	1,01E-01	3,77E-01	4,43E-02	2,55E-02	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	5,84E-02	2,77E-02	2,09E-03	-5,04E-02
Eutrophication	kg PO_4^3e	1,12E-01	4,10E-03	2,22E-02	1,38E-01	1,08E-02	5,90E-03	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	1,49E-02	6,48E-03	6,64E-04	-9,79E-03
POCP (“smog”)	kg C_2H_4e	1,82E-02	1,50E-03	9,26E-03	2,90E-02	3,95E-03	1,91E-03	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	5,57E-03	2,08E-03	1,98E-04	-4,45E-03
ADP-elements	kg Sbe	2,35E-04	1,76E-05	1,04E-05	2,63E-04	4,63E-05	6,94E-06	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	7,86E-05	1,52E-06	6,20E-07	-5,60E-05
ADP-fossil	MJ	5,79E+02	9,25E+01	2,07E+02	8,78E+02	2,43E+02	5,30E+01	0,00E+00	MND	MND	MND	MND	MND	MND	0,00E+00	3,38E+02	5,68E+01	9,67E+00	-1,13E+02

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	1,27E+02	6,46E+00	1,63E+01	1,50E+02	1,70E+01	4,08E+00	-5,01E-01	MND	MND	MND	MND	MND	MND	0,00E+00	2,46E+01	4,37E+00	3,98E-01	-1,06E+01

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH4 fossil, CH4 biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO2 is set to zero.

CONVERSION TABLE FOR ALTERNATIVE UNITS

The correlation between the material and energy inputs to calculate A1-A3 numbers is linear as such, we can apply the following conversions factors:

Product profile	A1- A3		
	Conversion factor	kg CO_2e - fossil	kg CO_2e - total
710 Series			
71T - 71 TOP BLOCK	-47.9%	78.10	78.10
71M - 71 MIDDLE BLOCK	-30.7%	103.99	103.99
71B - 71 BOTTOM BLOCK	-24.8%	112.85	112.85
71HT - 71 HALF TOP BLOCK	-74.9%	37.71	37.71
71HM - 71 HALF MIDDLE BLOCK	-67.4%	48.83	48.83
71HB - 71 HALF BOTTOM BLOCK	-64.8%	52.77	52.77
1040 Series			
104M - 104 MIDDLE BLOCK	**0.0%**	**150.00**	**150.00**
104B - 104 BOTTOM BLOCK	5.6%	158.44	158.44
104P - 104 PLANTER BLOCK	-14.1%	128.89	128.89
104HM - 104 HALF MIDDLE BLOCK	-62.1%	56.85	56.85
104HB - 104 HALF BOTTOM BLOCK	-55.7%	66.42	66.42
104HP - 104 HALF PLANTER BLOCK	-53.0%	70.50	70.50
1520 Series			
150M - 150 MIDDLE BLOCK	40.0%	209.94	209.94
150B - 150 BOTTOM BLOCK	45.5%	218.25	218.25
150P - 150 PLANTER BLOCK	25.9%	188.84	188.84
150HM - 150 HALF MIDDLE BLOCK	-43.3%	84.99	84.99
150HB - 150 HALF BOTTOM BLOCK	-40.7%	88.93	88.93
150HP - 150 HALF PLANTER BLOCK	-49.7%	75.42	75.42

Product profile	A1- A3		
	Conversion factor	kg CO_2e - fossil	kg CO_2e - total
Freestanding Blocks - 2 Sided			
ST - STRAIGHT TOP FULL BLOCK	-36.3%	95.54	95.54
HST - STRAIGHT TOP HALF BLOCK	-68.2%	47.70	47.70
CT - CURVED TOP FULL BLOCK	-38.9%	91.60	91.60
SG - STRAIGHT GARDEN FULL BLOCK	-51.4%	72.89	72.89
HSG - STRAIGHT GARDEN HALF BLOCK	-75.9%	36.16	36.16
CG - CURVED GARDEN FULL BLOCK	-53.5%	69.79	69.79
SM - STRAIGHT MIDDLE FULL BLOCK	-35.0%	97.51	97.51
HSM - STRAIGHT MIDDLE HALF BLOCK	-67.5%	48.69	48.69
CM - CURVED TOP MIDDLE BLOCK	-37.6%	93.57	93.57
SB - STRAIGHT BOTTOM FULL BLOCK	-29.8%	105.25	105.25
HSB - STRAIGHT BOTTOM HALF BLOCK	-65.1%	52.35	52.35
CB - CURVED BOTTOM FULL BLOCK	-32.5%	101.31	101.31
Freestanding Corner Blocks - 3 Sided			
TC - TOP CORNER FULL BLOCK	-36.5%	95.26	95.26
HTC - HALF TOP CORNER BLOCK	-68.5%	47.28	47.28
GC - GARDEN CORNER FULL BLOCK	-49.7%	75.42	75.42
HGC - HALF GARDEN CORNER BLOCK	-74.2%	38.70	38.70
MC - MIDDLE CORNER FULL BLOCK	-34.7%	97.94	97.94
HMC - HALF MIDDLE CORNER BLOCK	-67.8%	48.26	48.26
Capping Blocks			
TWO SIDED CAP	-72.6%	41.09	41.09
TWO SIDED CURVE CAP	-73.6%	39.54	39.54
THREE SIDED CAP	-71.6%	42.64	42.64
FOUR SIDED CAP	-70.7%	43.90	43.90
TWO SIDED HALF CAP	-86.3%	20.54	20.54
THREE SIDED HALF CAP	-85.3%	22.09	22.09

THIRD-PARTY VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online
This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited
09.09.2025