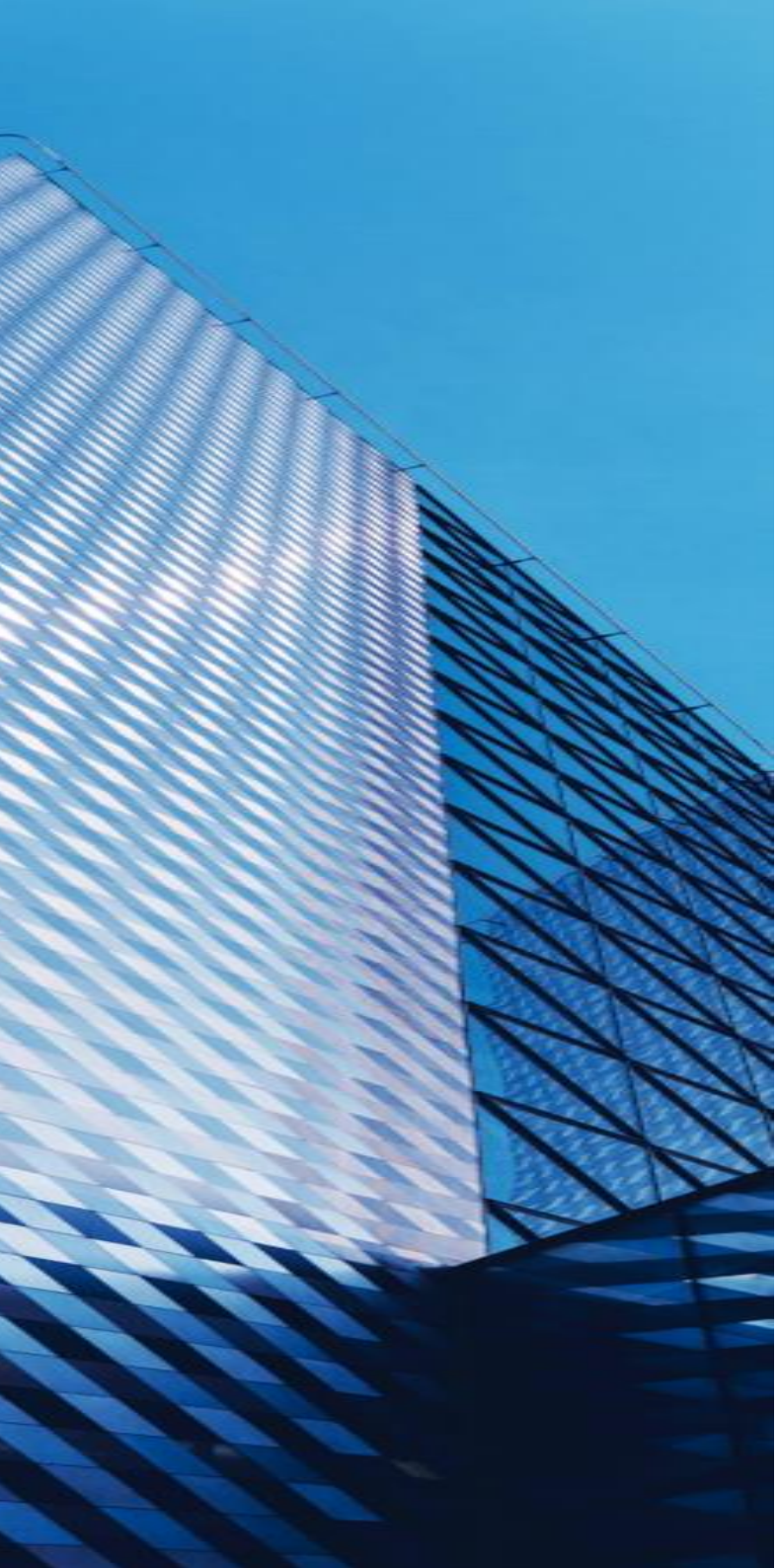


ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Elite 54 and 58 Wall System Ranges (0.9mm External Sheet)
Euroclad Group

Elite 54 Range

Elite 58 Range

EPD HUB, HUB-1822
Publishing date 29 July 2024, last updated on 29 July 2024, valid until 29 July 2029.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Euroclad Group
Address	Wentloog Corporate Park, St. Mellons, Cardiff CF3 2ER, UK
Contact details	SustainabilityTeam@kingspan.com
Website	https://www.eurocladgroup.com/

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
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Becca Spurdle, Kingspan Insulated Panels
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited

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	Elite 54 and 58 Wall System Ranges (0.9mm External Sheet)
Additional labels	-
Product reference	-
Place of production	Cardiff, United Kingdom
Period for data	01.01.22 - 31.12.22
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	- %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1m2 (180mm thickness)
Declared unit mass	10.42 kg
GWP-fossil, A1-A3 (kgCO2e)	5.75E+01
GWP-total, A1-A3 (kgCO2e)	5.81E+01
Secondary material, inputs (%)	35
Secondary material, outputs (%)	46.7
Total energy use, A1-A3 (kWh)	251
Net fresh water use, A1-A3 (m3)	12.8

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Euroclad Group is a leading international supplier of architectural metal building solutions, we supply our products to the construction industry, globally.
As a unified company with cross industry expertise, our customers can be confident we will deliver trusted building solutions through:
- Customer Excellence
- Nurturing the potential of our people
- Continually improving performance standards

PRODUCT DESCRIPTION

This EPD covers the Elite 54 and 58 (0.9mm aluminium external sheet) Wall System Ranges (180mm thickness) - see scaling table in annex for additional thickness options

The Elite 54 Range comprises external wall systems with our EC Opus 25-150 Wall or EC Opus 25-200 Wall steel plank profile vertically laid, the Quattro Spacer System, quilt insulation and internal steel liner.
The Elite 58 Range comprises external wall systems with our EC Opus 25-150 Wall or EC Opus 25-200 Wall steel plank profile horizontally laid, the Quattro Spacer System, quilt insulation and internal steel liner.
Elite 54 & 58 FR15 and Elite 51,52,53 FR30 achieve a minimum fire resistance performance of 120 minutes Integrity to BS 476-22:1987.
Elite 54 & 58 FR15 achieves a minimum Insulation performance of 15 minutes to the same standard, whereas Elite 51,52,53 FR30 achieves a minimum Insulation performance of 30 minutes.

Further information can be found at https://www.eurocladgroup.com/.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	77	EU
Minerals	19	EU
Fossil materials	4	EU
Bio-based materials	-	-

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	0.295

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1m2 (180mm thickness)
Mass per declared unit	10.42 kg
Functional unit	-
Reference service life	-

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	MND	MND	MND	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	Deconstr./demol.	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.

The manufacturing of the panels begin with the loading the metal coil onto the decoiler, before feeding the material into the roll forming machine. The coil is cold rolled through the roll forming machine gradually bending the metal into the desired shape and then cut to length. The finished panels are stacked, a protective sheet is added and banded together with plastic banding and distributed on wooden beams.

The environmental impacts considered at the product stage cover the manufacturing of the product alongside the packaging materials and any other ancillary materials. The reporting in this stage also accounts for the fuels used by machines, material losses and waste formed in the manufacturing process.

Transportation distances in A1 have been determined by the direct distance between our suppliers and manufacturing site.

We have included the impact of our production losses in A3 manufacturing waste through the inclusion of our scrap rate for this product.

The energy source profile used within this EPD has been based off a UK average grid mix of both renewable and non-renewable sources.

The EoL for our manufacturing waste in A3 have been assumed based on our on-site waste collection. We have assumed a transportation distance of 50km to the nearest

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.

The transportation distance is assumed to be an average of 305km. The insulated panels are made to order, specific to the buildings requirements. Installation guides are available to assist the contractor with correct installation of the product and any ancillaries. The installation scenario assumes steel fixings and a conservative estimate of electricity for a power tool (1 kWh) and diesel (2 kWh) for a crane. Impacts for additional fixings/material required for different applications can be advised by our technical teams. Installation losses are estimated at 2%. These losses, as well as packaging, are included as installation waste.

The EoL of the installation waste and packaging have been included within the LCA model. We assume that 95% of the steel goes to recycling, in line with the World Steel Association (2020). The remaining steel alongside the fibre core and non-recyclable packaging is assumed to go to landfill or incineration with energy recovery.

An assumption of 50km has been used for transportation from the building site to the nearest waste disposal site.

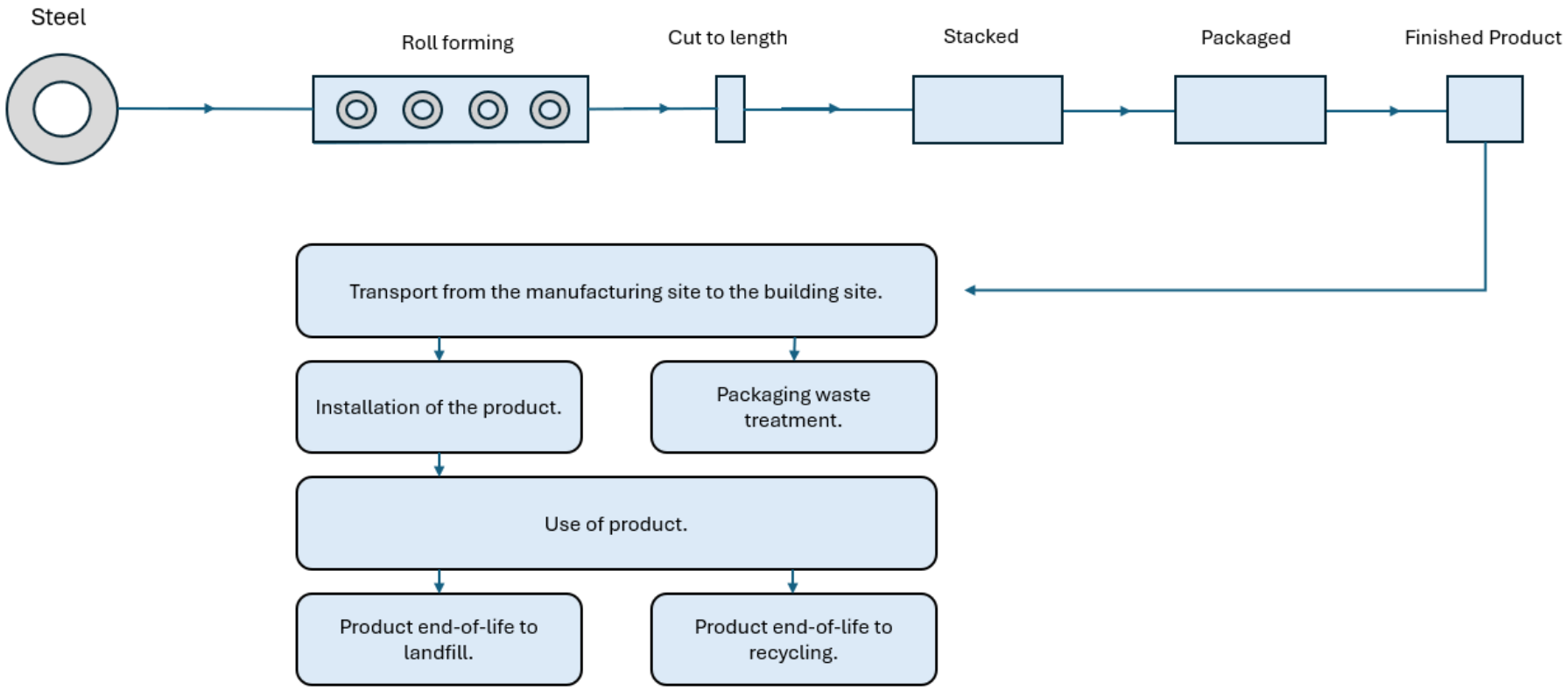
PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

For removal of the product, a conservative estimate of electricity for a power tool (1 kWh) and diesel (2 kWh) for a crane has been made. At the end of the product service life, it is recommended that the panels are sent to a reclamation facility where the steel can be separated from the fibre and be recycled. 95% of steel is assumed to be recycled, with the remaining 5% landfilled according to 'World Steel Association, 2020'. The EOL of the fibre is assumed as landfill based on the current market. It is not recommended that whole panels are sent to landfill. In Module D, the net benefit of recycling steel and waste treatment of packaging materials is included as avoided material production (from recycling) and electricity and heat production (from incineration).

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 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.

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 done as per 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 materials	No allocation
Ancillary materials	Not applicable
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	- %

This EPD is product and factory specific and does not contain average calculations.

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 v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

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	5.58E+01	2.26E-01	2.09E+00	5.81E+01	3.36E-01	3.98E+00	MND	MND	MND	MND	MND	MND	MND	9.74E-01	8.59E-02	2.01E-01	9.17E-01	-9.99E+00
GWP – fossil	kg CO_2e	5.51E+01	2.26E-01	2.20E+00	5.75E+01	3.36E-01	3.86E+00	MND	MND	MND	MND	MND	MND	MND	9.73E-01	8.59E-02	2.00E-01	9.17E-01	-9.99E+00
GWP – biogenic	kg CO_2e	0.00E+00	0.00E+00	-1.08E-01	-1.08E-01	0.00E+00	1.08E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP – LULUC	kg CO_2e	7.24E-01	8.57E-05	4.27E-04	7.24E-01	1.26E-04	1.53E-02	MND	MND	MND	MND	MND	MND	MND	4.92E-04	3.43E-05	2.61E-04	1.96E-05	-2.24E-03
Ozone depletion pot.	kg CFC_{-11}e	3.60E-06	5.55E-08	4.03E-08	3.70E-06	8.38E-08	2.74E-07	MND	MND	MND	MND	MND	MND	MND	1.63E-07	1.99E-08	2.15E-08	7.07E-09	-4.05E-07
Acidification potential	mol H^+e	3.71E-01	7.13E-04	7.78E-03	3.79E-01	1.07E-03	1.78E-02	MND	MND	MND	MND	MND	MND	MND	7.85E-03	2.44E-04	2.30E-03	3.27E-04	-4.08E-02
EP-freshwater[2)]	kg Pe	1.90E-03	1.65E-06	8.87E-05	1.99E-03	2.40E-06	7.14E-05	MND	MND	MND	MND	MND	MND	MND	8.24E-06	6.13E-07	8.71E-06	3.69E-07	-4.00E-04
EP-marine	kg Ne	5.08E-02	1.56E-04	1.46E-03	5.25E-02	2.36E-04	4.92E-03	MND	MND	MND	MND	MND	MND	MND	3.26E-03	4.87E-05	4.87E-04	1.38E-04	-8.31E-03
EP-terrestrial	mol Ne	6.05E-01	1.73E-03	1.59E-02	6.23E-01	2.62E-03	5.45E-02	MND	MND	MND	MND	MND	MND	MND	3.59E-02	5.41E-04	5.62E-03	1.45E-03	-9.70E-02
POCP ("smog")[3)]	kg NMVOCe	2.01E-01	6.76E-04	7.09E-03	2.09E-01	1.03E-03	1.62E-02	MND	MND	MND	MND	MND	MND	MND	9.80E-03	2.08E-04	1.54E-03	3.74E-04	-4.81E-02
ADP-minerals & metals[4)]	kg Sbe	3.02E-04	5.84E-07	1.64E-06	3.04E-04	8.22E-07	1.32E-05	MND	MND	MND	MND	MND	MND	MND	1.22E-06	3.10E-07	2.29E-05	1.11E-07	-1.81E-04
ADP-fossil resources	MJ	5.84E+02	3.57E+00	3.31E+01	6.21E+02	5.37E+00	3.56E+01	MND	MND	MND	MND	MND	MND	MND	1.72E+01	1.28E+00	2.40E+00	5.13E-01	-9.63E+01
Water use[5)]	m^3e depr.	4.02E+01	1.64E-02	1.74E+01	5.76E+01	2.48E-02	1.46E+00	MND	MND	MND	MND	MND	MND	MND	8.81E-02	5.98E-03	4.08E-02	3.69E-02	-1.81E+00

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, PEF

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	5.04E-06	2.52E-08	8.78E-08	5.15E-06	3.90E-08	3.31E-07	MND	MND	MND	MND	MND	MND	MND	1.89E-07	6.92E-09	3.13E-08	3.40E-09	-6.38E-07
Ionizing radiation[6)]	kBq U235e	5.85E+00	1.83E-02	1.19E-01	5.99E+00	2.76E-02	5.06E-01	MND	MND	MND	MND	MND	MND	MND	3.32E-01	6.71E-03	1.44E-02	2.08E-03	-1.63E-01
Ecotoxicity (freshwater)	CTUe	1.48E+03	2.99E+00	1.10E+01	1.49E+03	4.46E+00	5.59E+01	MND	MND	MND	MND	MND	MND	MND	9.32E+00	1.07E+00	1.13E+01	2.13E+00	-3.44E+02
Human toxicity, cancer	CTUh	2.09E-07	7.89E-11	4.48E-10	2.09E-07	1.16E-10	6.86E-09	MND	MND	MND	MND	MND	MND	MND	2.86E-10	3.28E-11	3.36E-10	8.60E-11	7.96E-08
Human tox. non-cancer	CTUh	1.85E-06	3.01E-09	7.82E-09	1.86E-06	4.54E-09	5.86E-08	MND	MND	MND	MND	MND	MND	MND	6.35E-09	1.04E-09	1.45E-08	3.22E-09	-2.30E-07

SQP[7)]	-	1.14E+02	3.97E+00	1.32E+01	1.31E+02	6.25E+00	9.55E+00	MND	MND	MND	MND	MND	MND	MND	4.25E+00	9.08E-01	4.78E+00	7.94E-01	-3.54E+01

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	2.71E+02	4.62E-02	2.44E+00	2.73E+02	6.95E-02	7.65E+00	MND	MND	MND	MND	MND	MND	MND	1.56E+00	1.86E-02	3.70E-01	9.57E-03	-9.59E+00
Renew. PER as material	MJ	0.00E+00	0.00E+00	8.79E-01	8.79E-01	0.00E+00	-8.79E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renew. PER	MJ	2.71E+02	4.62E-02	3.32E+00	2.74E+02	6.95E-02	6.77E+00	MND	MND	MND	MND	MND	MND	MND	1.56E+00	1.86E-02	3.70E-01	9.57E-03	-9.59E+00
Non-re. PER as energy	MJ	5.98E+02	3.57E+00	2.97E+01	6.31E+02	5.37E+00	3.59E+01	MND	MND	MND	MND	MND	MND	MND	1.72E+01	1.28E+00	2.40E+00	5.13E-01	-9.64E+01
Non-re. PER as material	MJ	8.64E+00	0.00E+00	3.33E+01	4.20E+01	0.00E+00	-3.34E+01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	-8.55E+00	0.00E+00
Total use of non-re. PER	MJ	6.07E+02	3.57E+00	6.30E+01	6.73E+02	5.37E+00	2.43E+00	MND	MND	MND	MND	MND	MND	MND	1.72E+01	1.28E+00	2.40E+00	-8.04E+00	-9.64E+01
Secondary materials	kg	3.64E+00	1.03E-03	1.81E-03	3.65E+00	1.51E-03	1.12E-01	MND	MND	MND	MND	MND	MND	MND	4.05E-03	4.35E-04	2.57E-03	2.22E-04	5.42E+00
Renew. secondary fuels	MJ	5.03E-03	9.51E-06	2.35E-03	7.39E-03	1.33E-05	3.14E-04	MND	MND	MND	MND	MND	MND	MND	1.36E-05	4.79E-06	1.31E-04	7.17E-06	-8.70E-04
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	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	1.21E+00	4.70E-04	1.16E+01	1.28E+01	7.12E-04	2.64E-01	MND	MND	MND	MND	MND	MND	MND	2.05E-03	1.63E-04	1.16E-03	1.71E-03	-2.28E-02

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	1.67E+01	3.96E-03	3.41E-02	1.68E+01	5.75E-03	5.29E-01	MND	MND	MND	MND	MND	MND	MND	2.91E-02	1.45E-03	1.84E-02	0.00E+00	-3.17E+00
Non-hazardous waste	kg	7.98E+01	6.85E-02	3.60E-01	8.02E+01	1.00E-01	3.71E+00	MND	MND	MND	MND	MND	MND	MND	3.21E-01	2.58E-02	4.67E-01	2.77E+00	-1.60E+01
Radioactive waste	kg	2.23E-03	2.46E-05	2.99E-05	2.29E-03	3.70E-05	2.04E-04	MND	MND	MND	MND	MND	MND	MND	1.36E-04	8.79E-06	1.06E-05	0.00E+00	-1.00E-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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	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	0.00E+00	0.00E+00	1.04E-01	1.04E-01	0.00E+00	1.55E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	7.77E+00	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	3.95E-03	3.95E-03	0.00E+00	8.68E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	3.80E-01	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	1.55E-02	1.55E-02	0.00E+00	3.78E+00	MND	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 / ISO 21930

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	5.37E+01	2.24E-01	2.09E+00	5.60E+01	3.33E-01	3.80E+00	MND	MND	MND	MND	MND	MND	MND	9.62E-01	8.51E-02	1.97E-01	9.15E-01	-9.49E+00
Ozone depletion Pot.	kg CFC_{-11}e	3.15E-06	4.39E-08	4.14E-08	3.24E-06	6.63E-08	2.29E-07	MND	MND	MND	MND	MND	MND	MND	1.31E-07	1.58E-08	1.74E-08	5.81E-09	-4.43E-07
Acidification	kg SO_2e	3.12E-01	5.79E-04	6.46E-03	3.19E-01	8.68E-04	1.39E-02	MND	MND	MND	MND	MND	MND	MND	5.67E-03	2.00E-04	1.85E-03	2.38E-04	-3.30E-02
Eutrophication	kg PO_4^3e	9.22E-02	1.23E-04	1.31E-03	9.37E-02	1.84E-04	6.16E-03	MND	MND	MND	MND	MND	MND	MND	1.39E-03	4.32E-05	5.77E-04	1.27E-04	-1.65E-02
POCP (“smog”)	kg C_2H_4e	2.63E-02	2.72E-05	4.46E-04	2.68E-02	4.05E-05	8.73E-04	MND	MND	MND	MND	MND	MND	MND	1.45E-04	1.01E-05	7.05E-05	6.96E-06	-5.44E-03
ADP-elements	kg Sbe	2.21E-04	5.68E-07	1.66E-06	2.23E-04	8.00E-07	1.15E-05	MND	MND	MND	MND	MND	MND	MND	1.22E-06	3.03E-07	2.29E-05	9.22E-08	-1.80E-04
ADP-fossil	MJ	6.07E+02	3.57E+00	6.34E+01	6.74E+02	5.37E+00	3.67E+01	MND	MND	MND	MND	MND	MND	MND	1.72E+01	1.28E+00	2.40E+00	5.13E-01	-9.63E+01

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

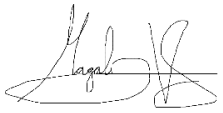
I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried 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.

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited
29.07.2024



VERIFIED ISO 14025

ANNEX 1

SCALING TABLE A1-A3:

Thickness of product		80	100mm	120mm	140mm	150mm	160mm	170mm	180mm	185mm	200mm	220mm	240mm	260mm	280mm	300mm	320mm	340mm	360mm	380mm	400mm
Product Weight per 1m2		9.2	9.5	9.7	10	10.2	10.2	10.4	10.4	10.6	10.7	10.9	11.1	11.4	11.6	11.8	12	12.3	12.5	12.7	13
Impact Category		A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
EN 15804+A2, PEF	GWP- Total	0.94	0.96	0.97	0.98	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.06	1.07	1.08	1.09	1.10	1.11	1.12
	GWP - FossiAB	0.94	0.96	0.97	0.98	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.06	1.07	1.08	1.09	1.10	1.11	1.12
	GWP - Biogenic	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	GWP - LULUC	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.02
	Ozone depletion pot.	0.94	0.95	0.96	0.98	0.99	0.10	1.00	1.00	1.01	1.01	1.02	1.04	1.05	1.06	1.07	1.08	1.09	1.11	1.12	1.13
	Acidification potentiaAB	0.94	0.96	0.97	0.98	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.06	1.07	1.08	1.09	1.10	1.11	1.12
	EP - Freshwater	0.93	0.95	0.96	0.97	0.99	0.10	1.00	1.00	1.02	1.02	1.03	1.04	1.06	1.07	1.08	1.10	1.11	1.12	1.14	1.15
	EP - Marine	0.93	0.94	0.96	0.97	0.99	0.99	1.00	1.00	1.02	1.02	1.03	1.04	1.06	1.07	1.08	1.10	1.11	1.13	1.14	1.15
	EP - Terrestrial	0.90	0.92	0.94	0.96	0.98	0.98	1.00	1.00	1.02	1.02	1.04	1.06	1.08	1.10	1.12	1.14	1.16	1.17	1.19	1.21
	POCP ("smog")	0.95	0.96	0.97	0.98	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.06	1.07	1.08	1.09	1.10	1.11	1.12
	ADP - minerals & metals	0.78	0.83	0.87	0.91	0.96	0.96	1.00	1.00	1.04	1.04	1.09	1.13	1.17	1.21	1.25	1.30	1.34	1.38	1.42	1.46
	ADP - fossil resources	0.92	0.94	0.96	0.97	0.99	0.99	1.00	1.00	1.01	1.01	1.03	1.05	1.06	1.08	1.09	1.10	1.12	1.13	1.15	1.16
EN 15804+A1, CML/ ISO 21930	Global Warming Potentia	0.94	0.96	0.97	0.98	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.06	1.07	1.08	1.09	1.10	1.11	1.12

ANNEX 2

SCALING TABLE A-C:

Thickness of product		80	100mm	120mm	140mm	150mm	160mm	170mm	180mm	185mm	200mm	220mm	240mm	260mm	280mm	300mm	320mm	340mm	360mm	380mm	400mm
Product Weight per 1m2		9.2	9.5	9.7	10	10.2	10.2	10.4	10.4	10.6	10.7	10.9	11.1	11.4	11.6	11.8	12	12.3	12.5	12.7	13
Impact Category		A-C	A-C	A-C	A-C	A-C	A-C	A-C	A-C	A-C	A-C	A-C	A-C	A-C	A-C	A-C	A-C	A-C	A-C	A-C	A-C
EN 15804+A2, PEF	GWP- Total	0.95	0.96	0.97	0.98	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08	1.09	1.10	1.11
	GWP - FossiAB	0.96	0.97	0.98	1.00	1.00	1.00	1.02	1.00	1.03	1.03	1.04	1.05	1.06	1.07	1.08	1.09	1.10	1.11	1.12	1.13
	GWP - Biogenic	0.92	0.94	0.96	0.97	0.98	0.99	1.00	1.00	1.01	1.02	1.03	1.05	1.06	1.08	1.09	1.10	1.12	1.13	1.15	1.16
	GWP - LULUC	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
	Ozone depletion pot.	0.94	0.96	0.97	0.98	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.06	1.07	1.08	1.09	1.10	1.11	1.12
	Acidification potentiaAB	0.94	0.96	0.97	0.98	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.05	1.06	1.08	1.09	1.10	1.11	1.12
	EP - Freshwater	0.93	0.95	0.96	0.97	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.04	1.05	1.06	1.08	1.09	1.10	1.12	1.13	1.14
	EP - Marine	0.94	0.95	0.96	0.98	0.99	0.99	1.00	1.00	1.01	1.01	1.03	1.04	1.05	1.06	1.07	1.09	1.10	1.11	1.12	1.13
	EP - Terrestrial	0.91	0.93	0.95	0.97	0.98	0.98	1.00	1.00	1.02	1.02	1.04	1.05	1.07	1.09	1.10	1.12	1.14	1.15	1.17	1.19
	POCP ("smog")	0.95	0.96	0.97	0.98	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08	1.09	1.10	1.11
	ADP - minerals & metals	0.80	0.85	0.88	0.92	0.96	0.96	1.00	1.00	1.04	1.04	1.08	1.11	1.15	1.20	1.23	1.27	1.31	1.34	1.38	1.42
	ADP - fossil resources	0.93	0.94	0.96	0.97	0.99	0.99	1.00	1.00	1.01	1.01	1.03	1.04	1.05	1.07	1.08	1.10	1.11	1.12	1.14	1.15
EN 15804+A1, CML/ ISO 21930	Global Warming Potentia	0.95	0.96	0.97	0.98	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08	1.09	1.10	1.11