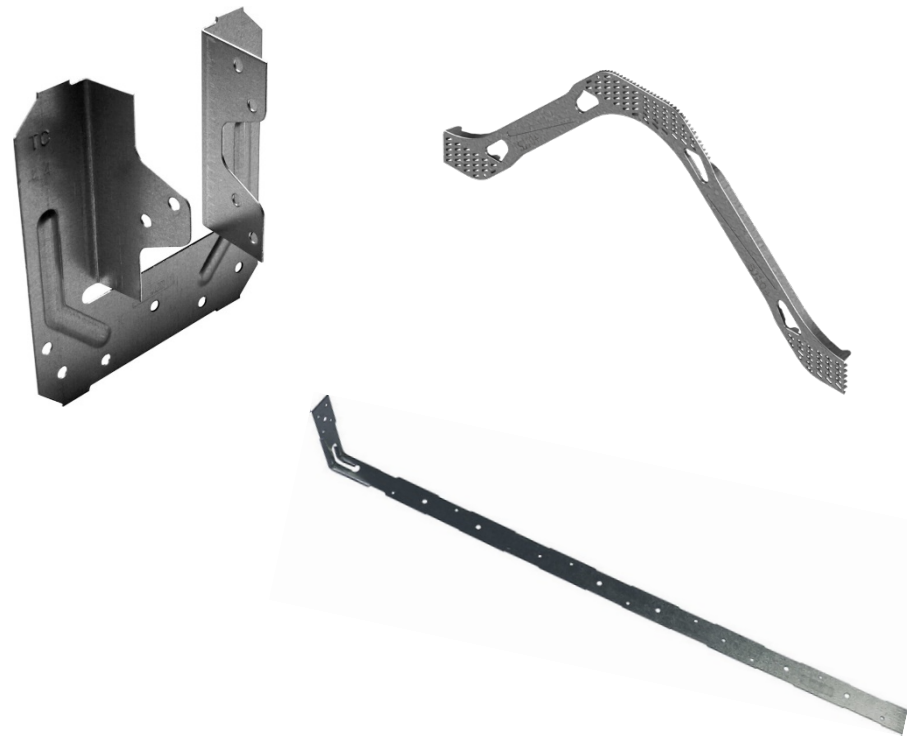


ENVIRONMENTAL PRODUCT DECLARATION

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

Cut and Cold-Formed Galvanized Steel
ITW Construction Products



EPD HUB, HUB-2399

Publishing date 15 December 2024, last updated on 18 December 2024, valid until 15 December 2029.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	ITW Construction Products
Address	1 Wheatstone Pl, Southfield Industrial Estate, Glenrothes, Fife, KY6 2SW, Scotland
Contact details	technical@itwcp.com
Website	https://www.itwcp-offsite.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
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	ITW Construction Products - Craig Smith
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	Cut and Cold-Formed Galvanized Steel
Additional labels	Cullen, Gang Nail
Product reference	https://www.itwcp-offsite.co.uk/
Place of production	Glenrothes, Scotland; Wakefield, England; Dudley, England; Cannock, England; Nottingham, England
Period for data	Calendar Year 2023
Averaging in EPD	Multiple factories
Variation in GWP-fossil for A1-A3	-6 % & +24 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	3.01
GWP-total, A1-A3 (kgCO ₂ e)	2.92
Secondary material, inputs (%)	5.83
Secondary material, outputs (%)	63.7
Total energy use, A1-A3 (kWh)	9.15
Net freshwater use, A1-A3 (m ³)	0.01

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

ITW Construction Products UK/Nordics is a division of ITW (Illinois Tool Works Ltd), a multinational industrial business operating across multiple industries.

Since ITW's founding more than 100 years ago, it has become one of the world's leading diversified manufacturers of specialized industrial equipment, consumables, and related service businesses. The foundation of our company is the ITW Business Model, a unique and differentiated set of core capabilities and business practices that comprises three key elements: ITW's 80/20 Front to Back Process, customer-back innovation and a decentralized entrepreneurial culture.

At ITW Construction Products UK/Nordics we are suppliers of innovative, engineered fastening systems and related consumables and software. This product is uniquely specified for a variety of materials, including wood, concrete and steel.

PRODUCT DESCRIPTION

The studied product is a metal component designed for use in various construction applications, manufactured by ITW Construction Products. The product takes the form of, but is not limited to, items such as metal hangers, brackets, connectors, and restraint straps, grouped as structural connectors.

Note on Representativeness:

The environmental impact results presented in this EPD are based on a representative product directly manufactured by ITW Construction Products. While ITW collaborates with other manufacturers, this EPD specifically reflects the environmental performance of ITW's own manufacturing facilities for the product. Averaging has been applied to ensure the results are representative of the typical manufacturing process across the manufacturing

sites.

Main Components.

The primary material used in these product is high-quality steel, selected for its strength, durability, and ability to withstand substantial structural loads. This steel is treated for corrosion resistance to ensure longevity in demanding construction environments.

Use Cases

These metal components are essential for structural stability in construction projects. They are typically used in joining and securing various parts of building frameworks, such as, but not limited to, connecting joists, beams, and other load-bearing elements . By providing secure connections, these components play a critical role in ensuring the integrity and safety of construction structures.

Technical Details

Material: High-grade steel with corrosion-resistant coating (zinc coating).

Strength: Engineered to withstand specific load capacities based on industry standards.

Applications: Primarily used in residential, commercial, and industrial building projects.

Compliance: Manufactured to meet relevant construction codes and standards to ensure safety and performance.

Further information can be found at <https://www.itwcp-offsite.co.uk/>.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	India, Belgium, France, UK
Minerals	0	-
Fossil materials	0	-
Bio-based materials	0	-

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	0.024

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1
Mass per declared unit	1 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	X	X	D	M/N	M/N	M/N	M/N	M/N	M/N	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.

The manufacturing process begins with galvanized steel sourced from different suppliers providing the main structural component. The material is then cut and formed into the final product. Some materials are induction welded but this has been accounted for in factory electricity, there are no other inputs into this process. Ancillary materials such as oils and coolants are used in machinery to maintain operational efficiency and to reduce the wear of machines and to ensure stable cutting and forming conditions, for shaping of the product.

Packaging materials include corrugated cardboard boxes for protection, wooden pallets for transport, and plastic film wraps for additional security for the finished product. The finished product is packaged in cardboard boxes and leaves the manufacturing facility on a wooden pallet, with packaging films wrapped around the pallet for additional cover and security of the product.

The process is powered by low-voltage electricity made up of a renewable mix which has been considered.

Steel scraps generated during production are sorted and recycled, emphasizing waste reduction. Also, the waste generated from the coolants is recycled into 95% drinking water and 5% fuel. Oil waste is recycled into fuel oil. Each step is designed to maximize resource efficiency while maintaining high quality and environmental responsibility.

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 finished product is transported to customer locations which include England, Scotland, Wales, Ireland and Northern Ireland. The transport distance to the customer considers all locations and the quantity shipped. 100% vehicle capacity utilization volume factor is assumed, meaning all shipments are considered full loads.

Although actual load factors can vary, this assumption simplifies calculations since transportation emissions contribute minimally to overall impact. Product sent to Northern Ireland and Ireland require sea transport as part of their delivery route. These shipments are typically consolidated with other cargo on shared freight vessels, rather than using dedicated transport solely for our product. This shared arrangement minimizes emissions per unit by distributing them across multiple loads on the same journey. Lastly, empty return trips are not accounted for, as it is assumed that the transport provider uses return journeys to fulfill other client needs, further optimizing resource use. Proper packaging also ensures that product arrive intact without losses due to transit.

The installation process energy is considered negligible, with the process assumed to use pneumatic, gas and manual methods. The nails used during the installation of each metal part produced is assumed at 0.5kg per kg weight of the metal product. For EoL of packaging materials Eurostat & PSR-0014 references have been used.

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)

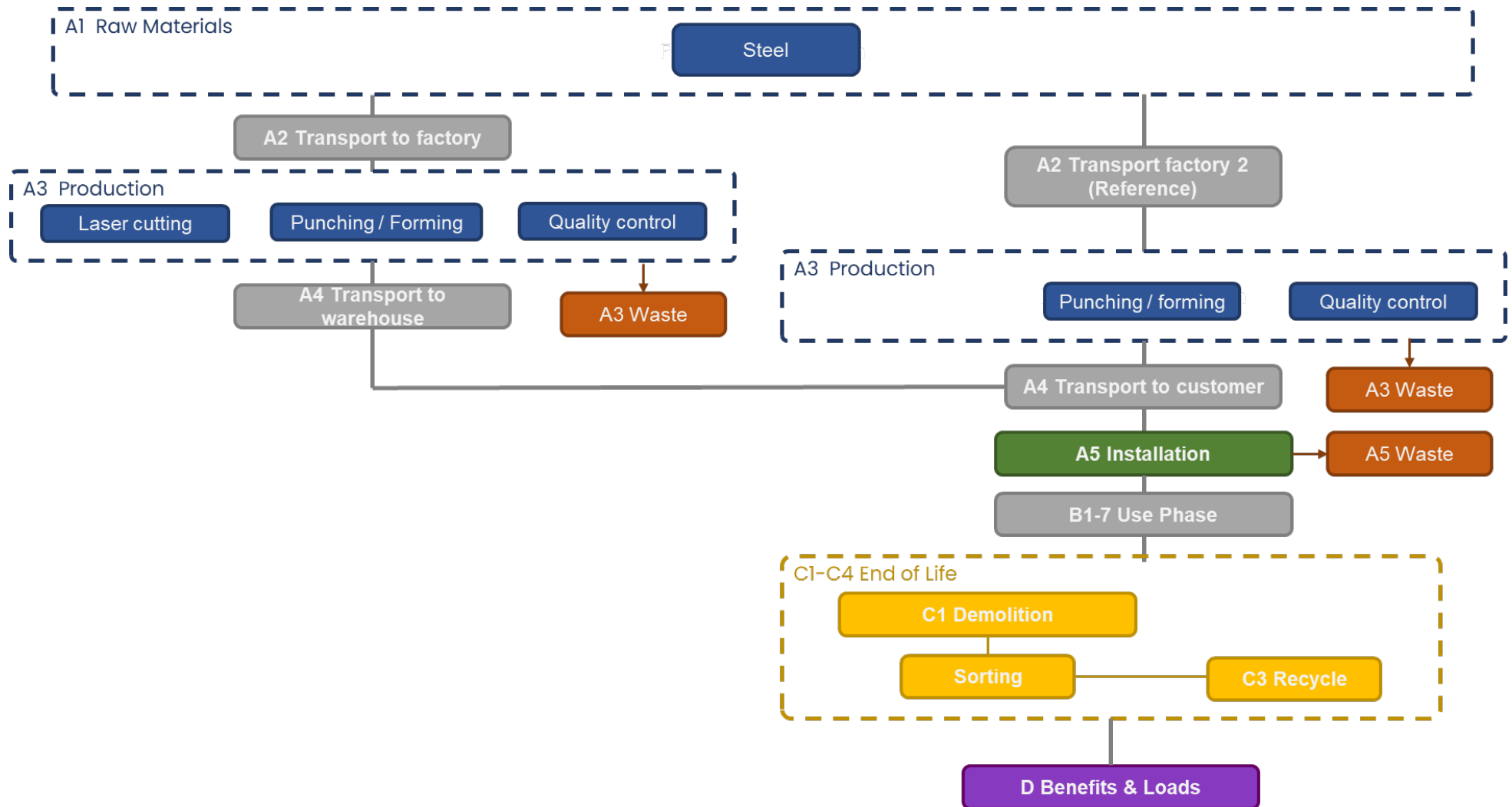
Demolition is assumed to consume 0.01 kWh/kg of product. The source of energy is diesel fuel used by construction machines (C1).

It is assumed that 100% of the waste is collected and transported to the waste treatment center. Transportation distance to treatment is assumed as 50 km and the transportation method is assumed to be lorry (C2).

Approximately 85% of steel is assumed to be recycled based on World Steel Association, 2020 (C3). It is assumed that the remaining 15 % of steel is taken to landfill for final disposal (C4).

Due to the recycling process, the end-of-life product is converted into recycled steel, while the wooden pallets are reused whenever possible, and the packaging film and cardboard boxes are recycled as per the industry standard (World Steel Association (pg19, 2020) PEFCR on thermal insulation Conservative assumption) (D).

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 material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	Multiple factories
Averaging method	Representative product
Variation in GWP-fossil for A1-A3	-6 % & +24 %

The product differs in size and shape but has a consistent BOM and general function as a building connector. The product is manufactured in different locations by several manufactures but the processes are all similar and consistent. The representative site manufactures around 85% of the sold product and the remaining 15% is manufactured across 4 different sites. The main variances in site results can be contributed to varying primary material scrap, packaging and energy use. Additional transport to collate the product in a primary warehouse has been taken into account.

All factories are located within the UK - Scotland and England:

Manufacturers Location:

Glenrothes, Scotland

Wakefield, England

Dudley, England

Cannock, England

Nottingham, England

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 ₂ e	2.86E+00	8.42E-02	-2.29E-02	2.92E+00	9.39E-02	1.47E+00	MND	MND	MND	MND	MND	MND	MND	3.31E-03	1.28E-02	2.78E-02	1.07E-03	-1.91E+00
GWP – fossil	kg CO ₂ e	2.86E+00	8.42E-02	6.23E-02	3.01E+00	9.38E-02	1.38E+00	MND	MND	MND	MND	MND	MND	MND	3.31E-03	1.27E-02	2.85E-02	1.18E-03	-1.91E+00
GWP – biogenic	kg CO ₂ e	0.00E+00	0.00E+00	-8.53E-02	-8.53E-02	0.00E+00	8.65E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	-6.85E-04	-1.21E-04	-8.10E-04
GWP – LULUC	kg CO ₂ e	9.38E-04	3.53E-05	1.72E-04	1.15E-03	3.84E-05	4.29E-03	MND	MND	MND	MND	MND	MND	MND	3.30E-07	5.34E-06	2.36E-05	1.12E-06	-3.19E-04
Ozone depletion pot.	kg CFC-11e	1.31E-12	1.92E-08	7.47E-09	2.66E-08	2.13E-08	1.13E-08	MND	MND	MND	MND	MND	MND	MND	7.07E-10	2.75E-09	1.31E-09	4.79E-10	-7.45E-08
Acidification potential	mol H ⁺ e	6.89E-03	3.58E-04	3.27E-04	7.57E-03	3.18E-04	3.24E-03	MND	MND	MND	MND	MND	MND	MND	3.44E-05	3.75E-05	1.31E-04	1.11E-05	-7.84E-03
EP-freshwater ²⁾	kg Pe	1.53E-06	6.97E-07	2.60E-06	4.83E-06	6.96E-07	2.74E-05	MND	MND	MND	MND	MND	MND	MND	1.10E-08	1.08E-07	1.12E-06	1.24E-08	-7.92E-05
EP-marine	kg Ne	1.74E-03	7.89E-05	9.77E-05	1.92E-03	6.61E-05	7.36E-04	MND	MND	MND	MND	MND	MND	MND	1.52E-05	7.49E-06	5.02E-05	3.86E-06	-1.61E-03
EP-terrestrial	mol Ne	1.88E-02	8.77E-04	9.75E-04	2.07E-02	7.35E-04	7.59E-03	MND	MND	MND	MND	MND	MND	MND	1.67E-04	8.33E-05	3.33E-04	4.24E-05	-1.87E-02
POCP (“smog”) ³⁾	kg NMVOCe	6.08E-03	3.03E-04	2.54E-04	6.63E-03	2.62E-04	2.53E-03	MND	MND	MND	MND	MND	MND	MND	4.59E-05	3.13E-05	9.39E-05	1.23E-05	-9.55E-03
ADP-minerals & metals ⁴⁾	kg Sbe	3.05E-05	2.33E-07	4.18E-07	3.12E-05	3.34E-07	8.65E-06	MND	MND	MND	MND	MND	MND	MND	1.68E-09	4.51E-08	8.90E-07	2.72E-09	-3.64E-05
ADP-fossil resources	MJ	2.81E+01	1.28E+00	1.13E+00	3.05E+01	1.38E+00	1.36E+01	MND	MND	MND	MND	MND	MND	MND	4.45E-02	1.85E-01	2.12E-01	3.25E-02	-1.67E+01
Water use ⁵⁾	m ³ e depr.	2.65E-01	5.65E-03	3.67E-02	3.08E-01	6.35E-03	6.96E-01	MND	MND	MND	MND	MND	MND	MND	1.20E-04	8.17E-04	6.89E-03	1.03E-04	-3.48E-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, 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	1.43E-08	8.40E-09	3.55E-09	2.62E-08	7.46E-09	3.69E-08	MND	MND	MND	MND	MND	MND	MND	9.22E-10	1.02E-09	2.20E-09	2.24E-10	-1.27E-07
Ionizing radiation ⁶⁾	kBq 11235e	4.33E-03	6.08E-03	2.40E-02	3.44E-02	7.05E-03	2.98E-02	MND	MND	MND	MND	MND	MND	MND	2.05E-04	8.65E-04	3.40E-03	1.47E-04	6.55E-02
Ecotoxicity (freshwater)	CTUe	9.21E-01	1.14E+00	1.44E+00	3.49E+00	1.18E+00	4.93E+00	MND	MND	MND	MND	MND	MND	MND	2.68E-02	1.70E-01	3.79E+00	2.12E-02	-6.83E+01
Human toxicity, cancer	CTUh	3.08E-10	3.10E-11	1.25E-10	4.64E-10	3.59E-11	1.34E-09	MND	MND	MND	MND	MND	MND	MND	1.03E-12	4.78E-12	5.95E-11	5.30E-13	1.62E-08
Human tox. non-cancer	CTUh	8.02E-09	1.07E-09	1.51E-09	1.06E-08	1.13E-09	2.16E-08	MND	MND	MND	MND	MND	MND	MND	1.94E-11	1.54E-10	9.46E-10	1.39E-11	-4.58E-08
SQP ⁷⁾	-	2.09E-01	1.25E+00	6.44E+00	7.90E+00	9.68E-01	1.08E+00	MND	MND	MND	MND	MND	MND	MND	5.79E-03	1.30E-01	1.08E+00	6.95E-02	-6.09E+00

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	1.54E+00	1.45E-02	8.24E-01	2.38E+00	1.90E-02	6.39E-01	MND	MND	MND	MND	MND	MND	MND	2.54E-04	2.20E-03	3.44E-02	2.82E-04	-1.47E+00
Renew. PER as material	MJ	0.00E+00	0.00E+00	7.45E-01	7.45E-01	0.00E+00	-7.45E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.50E-03
Total use of renew. PER	MJ	1.54E+00	1.45E-02	1.57E+00	3.12E+00	1.90E-02	-1.06E-01	MND	MND	MND	MND	MND	MND	MND	2.54E-04	2.20E-03	3.44E-02	2.82E-04	-1.47E+00
Non-re. PER as energy	MJ	2.82E+01	1.28E+00	1.05E+00	3.05E+01	1.38E+00	1.36E+01	MND	MND	MND	MND	MND	MND	MND	4.45E-02	1.85E-01	2.11E-01	3.25E-02	-1.67E+01
Non-re. PER as material	MJ	0.00E+00	0.00E+00	6.76E-02	6.76E-02	0.00E+00	-6.76E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-02
Total use of non-re. PER	MJ	2.82E+01	1.28E+00	1.12E+00	3.06E+01	1.38E+00	1.36E+01	MND	MND	MND	MND	MND	MND	MND	4.45E-02	1.85E-01	2.11E-01	3.25E-02	-1.67E+01
Secondary materials	kg	5.83E-02	3.89E-04	1.43E-02	7.29E-02	4.70E-04	5.93E-03	MND	MND	MND	MND	MND	MND	MND	1.74E-05	6.18E-05	3.81E-04	6.83E-06	1.10E+00
Renew. secondary fuels	MJ	0.00E+00	4.11E-06	2.82E-02	2.82E-02	5.33E-06	4.77E-06	MND	MND	MND	MND	MND	MND	MND	5.70E-08	8.00E-07	3.09E-05	1.78E-07	-1.90E-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	7.98E-03	1.59E-04	6.11E-04	8.75E-03	1.72E-04	1.68E-02	MND	MND	MND	MND	MND	MND	MND	2.70E-06	2.20E-05	1.78E-04	3.56E-05	-4.10E-03

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	3.45E-07	1.74E-03	1.08E-02	1.25E-02	1.68E-03	7.63E-02	MND	MND	MND	MND	MND	MND	MND	5.96E-05	2.68E-04	2.76E-03	0.00E+00	-6.38E-01
Non-hazardous waste	kg	7.83E-02	2.78E-02	9.85E-02	2.05E-01	2.88E-02	3.21E-01	MND	MND	MND	MND	MND	MND	MND	4.19E-04	4.27E-03	8.85E-02	2.25E-01	-3.15E+00
Radioactive waste	kg	4.66E-04	8.58E-06	6.79E-06	4.81E-04	9.45E-06	7.13E-06	MND	MND	MND	MND	MND	MND	MND	3.13E-07	1.23E-06	1.24E-06	0.00E+00	4.57E-06

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	1.27E-01	1.27E-01	0.00E+00	2.51E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	1.27E+00	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E-03	MND	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	8.77E-02	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 ₂ e	2.83E+00	8.34E-02	6.55E-02	2.98E+00	9.30E-02	1.34E+00	MND	MND	MND	MND	MND	MND	MND	3.27E-03	1.26E-02	4.58E-02	1.16E-03	-1.81E+00
Ozone depletion Pot.	kg CFC ₁₁ e	1.75E-12	1.52E-08	6.07E-09	2.13E-08	1.69E-08	1.07E-08	MND	MND	MND	MND	MND	MND	MND	5.60E-10	2.18E-09	1.09E-09	3.79E-10	-8.32E-08
Acidification	kg SO ₂ e	5.64E-03	2.90E-04	2.47E-04	6.18E-03	2.60E-04	2.67E-03	MND	MND	MND	MND	MND	MND	MND	2.45E-05	3.08E-05	1.04E-04	8.42E-06	-6.34E-03
Eutrophication	kg PO ₄ ³ e	6.07E-04	5.44E-05	3.07E-04	9.68E-04	5.19E-05	6.95E-04	MND	MND	MND	MND	MND	MND	MND	5.69E-06	6.79E-06	1.73E-04	1.82E-06	-3.26E-03
POCP (“smog”)	kg C ₂ H ₄ e	1.01E-03	1.20E-05	2.10E-05	1.04E-03	1.20E-05	4.28E-04	MND	MND	MND	MND	MND	MND	MND	5.36E-07	1.53E-06	1.03E-05	3.53E-07	-1.09E-03
ADP-elements	kg Sbe	4.06E-05	2.27E-07	3.97E-07	4.12E-05	3.26E-07	8.55E-06	MND	MND	MND	MND	MND	MND	MND	1.65E-09	4.41E-08	8.86E-07	2.68E-09	-3.63E-05
ADP-fossil	MJ	2.66E+01	1.28E+00	1.13E+00	2.90E+01	1.38E+00	1.36E+01	MND	MND	MND	MND	MND	MND	MND	4.45E-02	1.85E-01	2.11E-01	3.25E-02	-1.67E+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

15.12.2024

