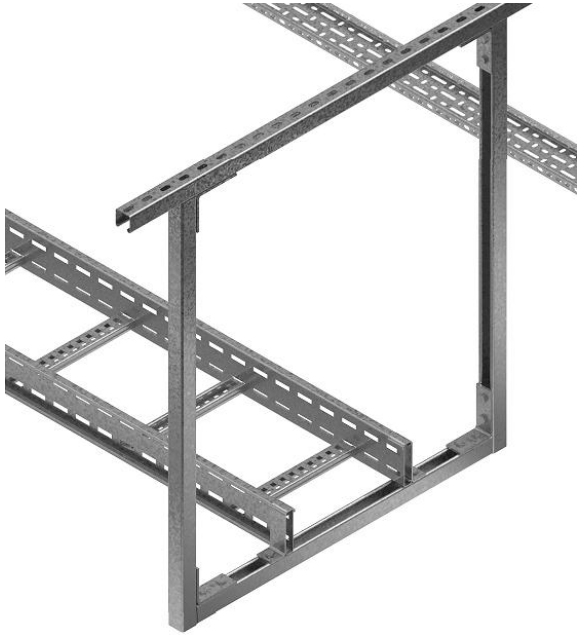
ENVIRONMENTAL PRODUCT DECLARATION

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

Cable Management - Channel Framing Systems
voestalpine Metsec plc Cable management Division



EPD HUB, HUB-2917
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GENERAL INFORMATION

MANUFACTURER

Manufacturer	voestalpine Metsec plc Cable management Division
Address	voestalpine Metsec plc Broadwell Road, , B69 4HF, Oldbury, West Midlands, B69 4 HF, GB
Contact details	metsec.cablemanagement@voestalpine.com
Website	www.metsec.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
Scope of the EPD	Cradle to gate with modules C1-C4, D
EPD author	Alan Harris
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Elma Avdyli, 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	Cable Management - Channel Framing Systems
Additional labels	-
Product reference	-
Place of production	Oldbury United Kingdom
Period for data	2023
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 Kg
Declared unit mass	1 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	2,75E+00
GWP-total, A1-A3 ($kgCO_2e$)	2,75E+00
Secondary material, inputs (%)	10.3
Secondary material, outputs (%)	85
Total energy use, A1-A3 (kWh)	8.8
Net freshwater use, A1-A3 (m^3)	1.01

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Voestalpine Metsec PLC is a cold roll forming company for the construction industry. Cold roll forming consists of gradually and continuously forming a steel profile.

The roll forming process involves a steel strip passing through rolls, each varying in shapes and numbers based on the complexity of the desired steel profile, to progressively transform it to make it into its final shape. Additional processes such as punching, stamping, logo printing, embossing, in-line high frequency welding, in-line piercing and cut to length options can be completed reducing the need for secondary processing.

Metsec can tailor make profiles manufactured from steel, stainless steel and pre-painted material.

Voestalpine Metsec PLC has been manufacturing from its site in Oldbury since 1931. In 1998 the company was acquired by voestalpine becoming voestalpine Metsec PLC and the company went from strength to strength following inward investment in machinery and new facilities.

Metsec's parent company voestalpine AG is a leading European manufacturer with steel making facilities and headquarters in Austria.

The group has 500 locations in 50 countries on all 5 continents. Metsec is part of voestalpine's metal forming division (tubes and sections), a leading global provider of high-quality metal processing solutions, particularly special tubes and sections, special strip steel and complex components for the automotive and many other industries.

Here at voestalpine Metsec PLC our core values are to provide solutions to suit a wide range of construction and manufacturing applications; with high quality, value added, technical experience and excellent customer service. Our 5 Divisions include: Cable Management Custom Roll Forming Dry Lining Purlins Framing (Metframe & SFS) We understand the importance of working at the forefront of the industry and how being compliant with the latest standards is key. For this we are proud to have a large number of accreditations for sustainability, BIM and quality.

We proactively invest in new technology to ensure the evolving expectations of our customers continue to be met or exceeded. We do this using our own software including MetSPEC. This software is available to download from our website for free.

PRODUCT DESCRIPTION

The voestalpine Metsec metal channel framing system comprises of single and combination channels, assembly brackets, channel nuts and fasteners. The integration of these items in their use, forms the basis of the system and as such should be purchased as a complete system.

The voestalpine Metsec metal channel framing system is certified and kitemarked by the BSI to BS 6946, the British Standard Specification for Metal channel cable support systems for electrical installations.

Independent testing has been carried out to verify the load tables for the various channels and to determine pull out and slip performance of the channel nuts when used as a system.

It is this system integrity that needs to be maintained for all installations to meet site safety requirements.

BS6946 requires channel sections to meet the dimensional requirements stated when measured not less than 150mm from the end. Twist will not be greater than 2.5 degrees per meter and bow shall not exceed 5mm for channel 3m in length and 10mm for channel 6m in length, when measured at the center of the length.

Safe working and slip pull out loads have been determined by carrying out the tests in accordance with the method stated in section 8 of the standard. It should be noted that the channel nuts are a vital component within the system and the numerous imported products do not necessarily carry the same load and should never be mixed with voestalpine Metsec systems.

Material specification
1. Channels, brackets and accessories are manufactured from steel complying with BS EN 10346 pre galvanized or BS EN 10025-2 mild steel hot dip galvanized after manufacture to BS EN 1461

2. Fixings: bolts, hexagon nuts, screws and washers are supplied complying with DIN938/8, DIN 933/8.8, BS4320 and zinc plated and CR3 passivated or hot dip galvanized after manufacture to BS EN 1461.

Comprehensive load tables are available for each channel type. The basis of design and formulation of these load tables:
1. Safe loads calculated in accordance with BS EN 1993-1-3 Code of Practice for Design of Cold Formed Sections (2006).

2. Minimum Yield Stress (YS) 280N/mm² (S280 GD + Z275 NA-C).

3. Beams assumed simply supported and provided with adequate lateral restraint over the given span.

4. Beam loads are applied through the shear center of the section in the direction indicated in the tables.

5. Alternative beam safe load tables are provided for a uniformly distributed load or load concentrated near the center of the span

6. Beam loads and corresponding deflections are calculated at a stress of 175N/mm2 i.e.: using a global factor of safety of 1.6 to determine safe working loads from limit state analysis (ultimate stress ÷ 1.6 = 175N/mm2). Beam safe loads tabulated with corresponding deflections may be used in the rare case where excessive deflection does not impair the strength or efficiency of the structure or its components or cause damage to the supported work.

Alternative safe loads are tabulated with deflections limited to span/200 or span/360 at the discretion of the designer and recommended where deflections are critical. It is easily recognizable from the tables whether the design of the beam is governed by deflection or stress on a given span i.e.: the critical load is highlighted in color.

7. Column effective lengths shall be determined by the designer in accordance with Table 9 of BS EN 1993-1-3.

8. Beam loads are generally applied at the column face via the connection bracket. Therefore column safe load tables are provided allowing for this eccentricity of load from the centroid of the section.

10. Load tables are supported and verified via extensive independent testing.

Further information can be found at www.metsec.com.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	Europe & Asia
Minerals	-	-
Fossil materials	-	-
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	0.0002065

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Kg
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		
×	×	×	MND	MND	MND	MND	MND	MND	MND	MND	MND	×	×	×	×	×		
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.

Roll Forming is the process of shaping strip metal by passing it through a series of specially designed shaped rolls, the process has high levels of repeatability and very tight tolerances. Profiles can be made from various metallic materials including Steel, Copper, Aluminum, Brass, Stainless Steel, coated Steels including Zinc, Paint and Plastic. The roll forming process can manufacture typical shaped profiles such as Channel, Angles, Boxes and Round Tube but is also able to form more complex profiles required for demanding technical solutions. The process is highly automated using modern control systems and can accommodate the piercing of holes and bespoke cut to length requirements of the customer The process includes fully integrated automated and semi automated packaging reducing handling. The finished product is stored in warehouse facilities prior to shipment to the customer. The manufacturing process requires electricity and fuels for product movement and loading as well as heating. All waste produced at Metsec is sold for recycling or is shipped to Energy Recovery Facilities. The loss of all material is considered within this EPD
Steel strapping and and timber are used for packaging and is required to ensure safe delivery of product to the customer.

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 defined according to the PCR. Average distance of transportation from production plant to building site is assumed as 368 km and the transportation method is assumed to be lorry (Urban Curtain Sided vehicle and Articulated or rigid open backed vehicles - Euro 6+ compliant). Vehicle capacity utilization calculated by Metsec is 96% this is governed by the pack size and shape of product and is achieved by utilizing multiple deliveries on the same vehicle. No vehicle is dedicated to a single delivery

unless the volume or quantity dictates. In reality, the vehicle utilization does vary but as role of transportation emissions in total results is small, the variety in load is assumed negligible. As the vehicles are dedicated for Metsec deliveries, the km figure calculated assumes the vehicle returns empty. Transportation does not cause losses as product are packaged to prevent damage. Module A5 data relating to the disposal of packaging from the delivery of product is included, however data relating to installation is not, since voestalpine Metsec plc do not have knowledge of how the installation is executed.

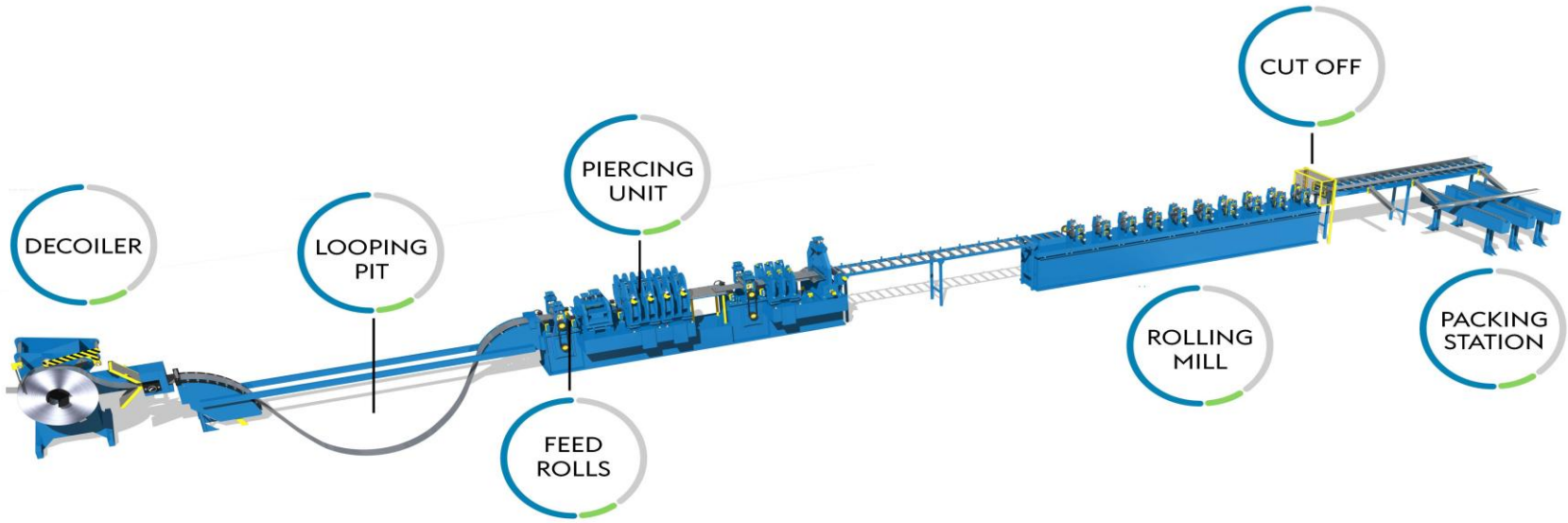
PRODUCT USE AND MAINTENANCE (B1-B7)

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 centre. Transportation distance to treatment is assumed as 50 km and the transportation method is assumed to be lorry (C2). Approximately 95% of steel is assumed to be recycled based on World Steel Association, 2020 (C3). It is assumed that the remaining 5 % 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 (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	No allocation
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

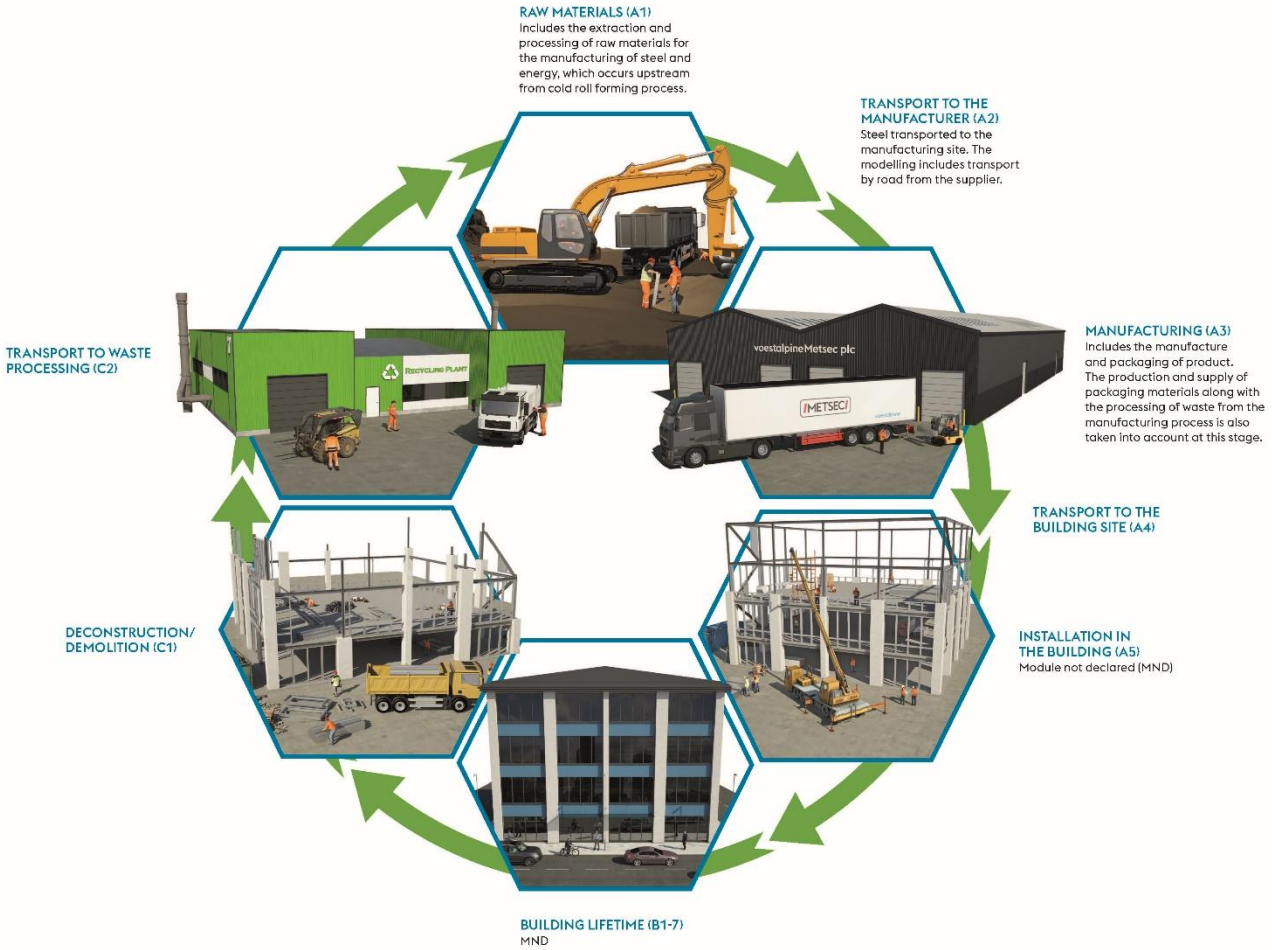
Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	%

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 v3.10.1 and One Click LCA databases as sources of environmental data.

PRODUCT LIFECYCLE



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	2,63E+00	9,06E-02	3,11E-02	2,75E+00	7,09E-02	7,86E-04	MND	MND	MND	MND	MND	MND	MND	3,61E-03	9,50E-03	1,92E-02	9,37E-04	-4,47E-01
GWP – fossil	kg CO_2e	2,63E+00	9,05E-02	3,18E-02	2,75E+00	7,08E-02	2,68E-05	MND	MND	MND	MND	MND	MND	MND	3,60E-03	9,50E-03	1,92E-02	9,36E-04	-4,48E-01
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-7,59E-04	-7,59E-04	0,00E+00	7,59E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,30E-05
GWP – LULUC	kg CO_2e	8,57E-04	5,26E-05	3,75E-05	9,47E-04	3,21E-05	1,90E-08	MND	MND	MND	MND	MND	MND	MND	3,69E-07	3,55E-06	2,37E-05	5,35E-07	5,00E-04
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	2,36E-09	1,43E-09	1,52E-09	5,31E-09	1,05E-09	3,32E-13	MND	MND	MND	MND	MND	MND	MND	5,52E-11	1,82E-10	2,58E-10	2,71E-11	4,68E-09
Acidification potential	mol H^+e	1,36E-02	1,75E-03	8,74E-05	1,54E-02	1,62E-04	1,12E-07	MND	MND	MND	MND	MND	MND	MND	3,25E-05	2,01E-05	2,29E-04	6,64E-06	6,15E-04
EP-freshwater[2)]	kg Pe	5,20E-05	4,18E-06	3,04E-06	5,92E-05	5,55E-06	7,17E-09	MND	MND	MND	MND	MND	MND	MND	1,04E-07	6,56E-07	1,24E-05	7,70E-08	3,43E-04
EP-marine	kg Ne	1,76E-03	3,99E-04	2,40E-05	2,18E-03	3,76E-05	5,43E-08	MND	MND	MND	MND	MND	MND	MND	1,51E-05	4,79E-06	5,06E-05	2,53E-06	2,60E-04
EP-terrestrial	mol Ne	4,73E-02	4,44E-03	2,75E-04	5,20E-02	4,06E-04	3,48E-07	MND	MND	MND	MND	MND	MND	MND	1,65E-04	5,17E-05	5,72E-04	2,76E-05	7,87E-04
POCP ("smog")[3)]	kg NMVOCe	5,49E-03	1,29E-03	7,72E-05	6,86E-03	2,27E-04	1,19E-07	MND	MND	MND	MND	MND	MND	MND	4,93E-05	3,25E-05	1,69E-04	9,90E-06	2,34E-04
ADP-minerals & metals[4)]	kg Sbe	3,99E-05	1,60E-07	1,04E-07	4,02E-05	2,37E-07	3,13E-10	MND	MND	MND	MND	MND	MND	MND	1,29E-09	3,17E-08	1,36E-06	1,49E-09	1,82E-06
ADP-fossil resources	MJ	2,85E+01	1,16E+00	8,53E-01	3,06E+01	9,96E-01	2,86E-04	MND	MND	MND	MND	MND	MND	MND	4,72E-02	1,34E-01	2,58E-01	2,30E-02	-5,57E+00
Water use[5)]	m^3e depr.	3,28E-01	4,41E-03	6,87E-03	3,39E-01	4,67E-03	4,95E-06	MND	MND	MND	MND	MND	MND	MND	1,18E-04	6,59E-04	4,64E-03	6,63E-05	4,39E-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	2,26E-07	3,99E-09	8,04E-10	2,31E-07	5,28E-09	2,24E-12	MND	MND	MND	MND	MND	MND	MND	9,25E-10	7,01E-10	3,10E-09	1,51E-10	-3,91E-08
Ionizing radiation[6)]	kBq U235e	2,28E-02	8,81E-04	2,97E-02	5,33E-02	8,14E-04	1,89E-06	MND	MND	MND	MND	MND	MND	MND	2,09E-05	1,63E-04	2,19E-03	1,44E-05	3,36E-02
Ecotoxicity (freshwater)	CTUe	8,92E+00	1,12E-01	4,55E-02	9,08E+00	1,58E-01	2,19E-04	MND	MND	MND	MND	MND	MND	MND	2,60E-03	1,83E-02	1,50E-01	1,93E-03	5,98E+00
Human toxicity, cancer	CTUh	9,82E-10	1,89E-11	6,59E-12	1,01E-09	1,18E-11	2,02E-14	MND	MND	MND	MND	MND	MND	MND	3,71E-13	1,59E-12	1,72E-11	1,73E-13	1,19E-09
Human tox. non-cancer	CTUh	8,83E-09	4,41E-10	2,00E-10	9,47E-09	6,28E-10	5,65E-13	MND	MND	MND	MND	MND	MND	MND	5,87E-12	8,45E-11	1,17E-09	3,97E-12	5,08E-08
SQP[7)]	-	1,58E+00	3,31E-01	5,15E-01	2,42E+00	6,03E-01	7,49E-04	MND	MND	MND	MND	MND	MND	MND	3,30E-03	8,08E-02	5,02E-01	4,52E-02	1,67E+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	1,02E+00	1,35E-02	2,53E-01	1,29E+00	1,38E-02	-7,11E-04	MND	MND	MND	MND	MND	MND	MND	2,99E-04	2,27E-03	4,81E-02	2,22E-04	5,38E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	6,58E-03	6,58E-03	0,00E+00	-6,58E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,00E-04
Total use of renew. PER	MJ	1,02E+00	1,35E-02	2,59E-01	1,30E+00	1,38E-02	-7,29E-03	MND	MND	MND	MND	MND	MND	MND	2,99E-04	2,27E-03	4,81E-02	2,22E-04	5,38E-01
Non-re. PER as energy	MJ	2,84E+01	1,16E+00	8,53E-01	3,04E+01	9,96E-01	2,86E-04	MND	MND	MND	MND	MND	MND	MND	4,72E-02	1,34E-01	2,58E-01	2,30E-02	-5,53E+00
Non-re. PER as material	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	1,30E-05
Total use of non-re. PER	MJ	2,84E+01	1,16E+00	8,53E-01	3,04E+01	9,96E-01	2,86E-04	MND	MND	MND	MND	MND	MND	MND	4,72E-02	1,34E-01	2,58E-01	2,30E-02	-5,53E+00
Secondary materials	kg	1,03E-01	6,18E-04	2,60E-04	1,04E-01	4,53E-04	2,99E-07	MND	MND	MND	MND	MND	MND	MND	1,96E-05	6,19E-05	3,15E-04	5,78E-06	3,85E-01
Renew. secondary fuels	MJ	2,71E-06	3,09E-06	5,60E-07	6,36E-06	5,79E-06	1,82E-08	MND	MND	MND	MND	MND	MND	MND	5,12E-08	7,84E-07	1,46E-05	1,20E-07	7,94E-05
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	1,01E+00	1,13E-04	7,19E-04	1,01E+00	1,36E-04	3,86E-08	MND	MND	MND	MND	MND	MND	MND	3,12E-06	1,82E-05	1,37E-04	2,39E-05	-8,59E-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	6,05E-03	1,78E-03	1,06E-03	8,89E-03	1,75E-03	1,99E-06	MND	MND	MND	MND	MND	MND	MND	5,25E-05	2,00E-04	1,69E-03	2,54E-05	2,40E-01
Non-hazardous waste	kg	2,06E-01	2,80E-02	1,74E-02	2,51E-01	3,28E-02	2,08E-04	MND	MND	MND	MND	MND	MND	MND	7,15E-04	4,15E-03	6,09E-02	5,80E-04	1,12E+01
Radioactive waste	kg	2,26E-04	2,19E-07	6,45E-06	2,33E-04	2,03E-07	4,84E-10	MND	MND	MND	MND	MND	MND	MND	5,18E-09	4,07E-08	5,61E-07	3,58E-09	8,75E-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	9,20E-03	9,20E-03	0,00E+00	7,26E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	8,50E-01	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	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
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,90E-05	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	2,62E+00	9,01E-02	3,17E-02	2,74E+00	7,05E-02	3,72E-05	MND	MND	MND	MND	MND	MND	MND	3,59E-03	9,44E-03	1,92E-02	9,28E-04	-4,46E-01
Ozone depletion Pot.	kg CFC_{-11}e	2,14E-09	1,14E-09	1,23E-09	4,51E-09	8,39E-10	2,68E-13	MND	MND	MND	MND	MND	MND	MND	4,37E-11	1,45E-10	2,13E-10	2,15E-11	3,94E-09
Acidification	kg SO_2e	9,13E-03	1,41E-03	6,68E-05	1,06E-02	1,31E-04	8,68E-08	MND	MND	MND	MND	MND	MND	MND	2,29E-05	1,61E-05	1,84E-04	4,91E-06	5,10E-04
Eutrophication	kg PO_4^3e	1,37E-03	1,49E-04	1,32E-05	1,53E-03	3,12E-05	3,22E-08	MND	MND	MND	MND	MND	MND	MND	5,34E-06	4,04E-06	2,66E-05	1,56E-06	8,71E-04
POCP (“smog”)	kg C_2H_4e	9,51E-04	7,21E-05	5,86E-06	1,03E-03	1,27E-05	9,81E-09	MND	MND	MND	MND	MND	MND	MND	1,71E-06	1,68E-06	1,09E-05	4,65E-07	-2,85E-04
ADP-elements	kg Sbe	4,47E-05	1,57E-07	1,03E-07	4,49E-05	2,31E-07	3,11E-10	MND	MND	MND	MND	MND	MND	MND	1,26E-09	3,09E-08	1,36E-06	1,46E-09	1,73E-06
ADP-fossil	MJ	9,24E+03	1,15E+00	1,04E+01	9,25E+03	9,83E-01	2,53E-04	MND	MND	MND	MND	MND	MND	MND	4,68E-02	1,31E-01	2,20E-01	2,28E-02	-8,37E+03

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.

Elma Avdyli, as an authorized verifier acting for EPD Hub Limited.
28.03.2025