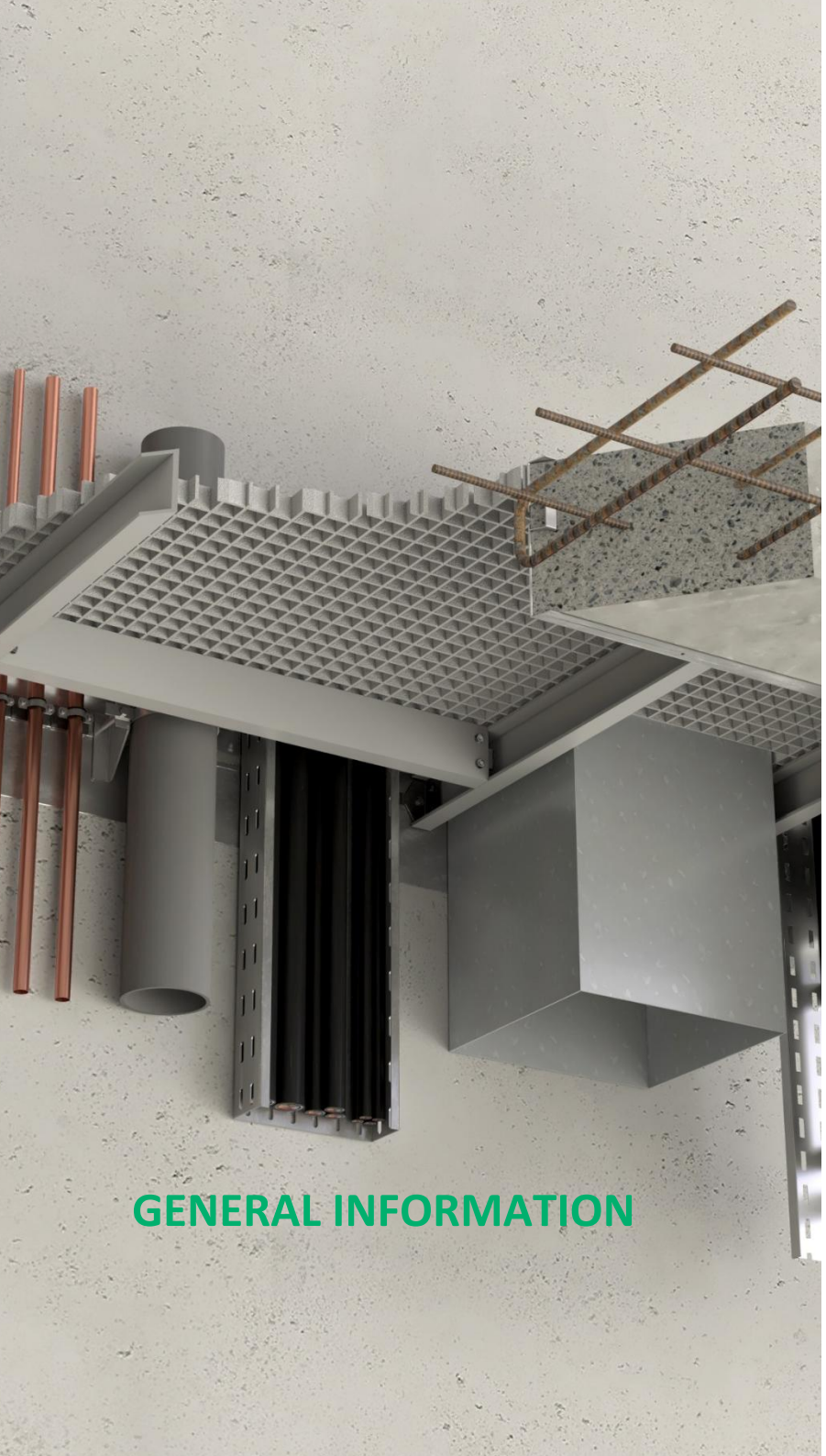


GENERAL INFORMATION

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

AlphaRiser® Riser Management System

EPD HUB, HUB-4863

Published on 16.01.2026, last updated on 16.01.2026, valid until 16.01.2031

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.

comtec
Innovation at the Core

MANUFACTURER

Manufacturer	Comtec
Address	Oak Tree Farm, Blacknest Road, Blacknest, Alton, GU34 4PZ, UK
Contact details	sales@comtecgrp.com
Website	https://comtecgrp.com/

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025
Sector	Construction Product
Category of EPD	Third party verified EPD
Parent EPD number	n/a
Scope of the EPD	Cradle to gate with options, A4-B7 and modules C1-C4, D
EPD author	Sam McGarrick (Blue Marble Environmental Partnerships Ltd.)
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Imane Uald Lamkaddam as an authorized verifier for EPD Hub

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	AlphaRiser®
Additional labels	See product description below
Product reference	-
Place(s) of raw material origin	Global
Place of production	Hatton, UK & Leicester, UK
Place(s) of installation and use	UK
Period for data	01 April 2024 - 31 March 2025
Averaging in EPD	Multiple products and multiple factories
Variation in GWP-fossil for A1-A3 (%)	-14% / +44%
A1-A3 Specific data (%)	5.87

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m^2
Declared unit mass[1]	40.73 kg
Mass of packaging	1.43 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	162
GWP-total, A1-A3 ($kgCO_2e$)	162
Secondary material, inputs (%)	13.4
Secondary material, outputs (%)	33.8
Total energy use, A1-A3 (kWh)	616
Net freshwater use, A1-A3 (m^3)	1.22

[1] Declared unit mass, mass of packaging in this averaged EPD are based on the midpoint / base case product – see section on Product Grouping below.

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Comtec, part of MCP Group Ltd, are providers of innovative, high strength composite solutions. We specialise in creating custom-made, unique solutions for major projects, with an unrivalled dedication to design, engineering and customer service.

Our journey in composites began by developing composite products for use in harsh and extreme environmental sectors, such as offshore and Oil & Gas, where the values of an alternative to steel-based products were of particular interest, due to the resilience of composite solutions we provided.

Over the years Comtec manufacturing technology has been refined and now it is one of the most reliable and adaptable materials available in today's regular construction markets, providing extensive opportunities to value engineer projects and deliver significant schedule and commercial benefits. These GRP (glass reinforced polyester) products offer unique advantages for almost any construction project. Today, Comtec composite products are used in countries around the world and in a vast range of industries; utilities, construction, infrastructure, oil & gas, data centres to name a few.

Comtec has developed strategic alliances with global leaders in the composite world to produce some of the most advanced GRP materials currently available, so wherever your project is located we are able to support you in your quest to deliver improvements and added value.

PRODUCT DESCRIPTION

AlphaRiser is a unique Riser Floor system that is integrated with the structural floor slab to protect the riser void and MEP services of services to pass through. The system is made from a steel frame with GRP composite joists and grating to reduce weight and simplify cutting for MEP penetrations, which eliminates the need for hot works permits.

Designed to accommodate either cast-in or retro-fit applications, AlphaRiser can be installed in conjunction with multiple methods of construction, from steel frame, cast concrete floors, pre-cast slabs etc. A significant benefit is the ease of adjustment in the joist positions to accommodate the positioning of MEP services. This means that risers can be procured and installed ahead of final MEP design being set, saving time and money later in the project.

AlphaRiser FR is a unique solution which creates effective horizontal fire-stopping and has been tested for effectiveness by a third party accredited test house to BS EN1366 pt 3.

Note: This EPD applies to multiple similar products within the AlphaRiser® range of riser systems. In order to create a representative average, the following product systems were considered:

- 3mm brackets with 140mm frame height and standard mesh grating with GRP thickness of 38mm and weight of 19.5 kg/m^2
- 3mm brackets with 150mm frame height and solid top mesh grating with GRP height of 38mm and weight of 24.2 kg/m^2
- 4mm brackets with 300mm frame height and mini mesh GRP grating with a thickness of 38mm and weight of 32 kg/m^2. Includes 150mm extended bottom flange

Further information can be found at: https://comtecgrp.com/

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	34%	Global
Minerals	40%	Global
Fossil materials	26%	Global
Bio-based materials	0%	n/a

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	0.24

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m^2
Mass per declared unit	40.73 kg
Functional unit	1 m^2 of riser system in place for 60 years
Reference service life	60 years

SUBSTANCES, REACH - VERY HIGH CONCERN

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

Figure 1. AlphaRiser® Top View

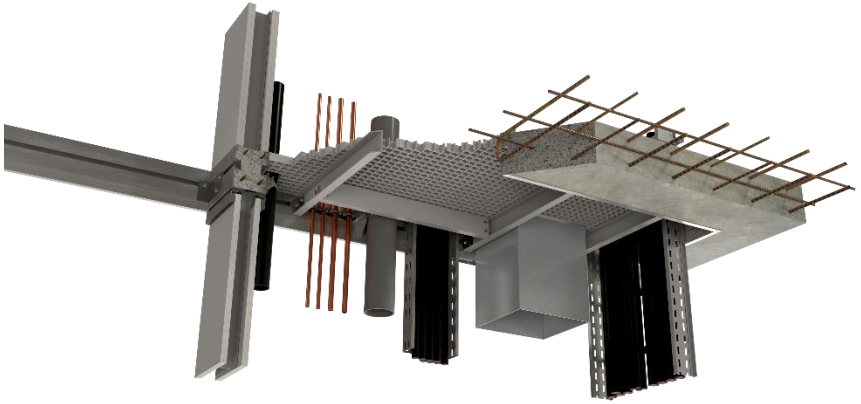


Figure 2. AlphaRiser® Underside View

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	x	x	x	x	x	x	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 = ND. 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 utilized in the factory.

The product is comprised of a steel frame, either zinc galvanised or painted, with steel brackets and steel fixings. It includes a glass reinforced plastic (GRP) grating mesh or solid top GRP panel and GRP joists. Small plastic endcaps are also utilised. The raw materials are sourced from globally distributed suppliers and transported to the two manufacturing facilities included within this averaged EPD. Materials from either manufacturing facility may be shipped to the other to support that factory's production output.

Each manufacturing facility utilises a specific energy mix. Across production a combination of on-site photovoltaics generating low voltage electricity, medium voltage electricity drawn from the grid and medium voltage electricity from renewable sources backed by guarantees of origin are used.

Production losses in the form of offcuts of GRP and steel are collected and either recycled or assumed to reach landfill.

The product packaging varies according to manufacturing facility but includes a combination of woven polyester strapping with steel buckles, plastic shrink wrap, cardboard and wooden pallet. In some cases, a light oil coating is applied to mill finish components to prevent corrosion prior to use.

The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs), 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.

Transport to site distance has been calculated on the basis of a weighted average of transportation distances from the two manufacturing facilities during the reference year. Transportation is via >32 tonne lorry.

A layer of flame-retardant protection board is applied at the point of installation in order provide temporary protection for the product during the building construction phase. Polyethylene foam is also used as an installation resource.

Packaging waste plus temporary installation resources are assumed to leave the system boundary at the point of installation and their waste treatment has been modelled according to typical European waste treatment scenarios. Transportation to waste treatment is assumed to be 50km via 16-32 tonne lorry.

A proportion of energy use in lifting units into place using a tower crane has been accounted for based on actual installation scenarios during the reference year.

PRODUCT USE AND MAINTENANCE (B1-B7)

Use phase impacts are assumed to be zero. The product has no operational impact, it does not require any maintenance, repair, replacement or refurbishment. It does not require any operational energy or operational water.

PRODUCT END OF LIFE (C1-C4, D)

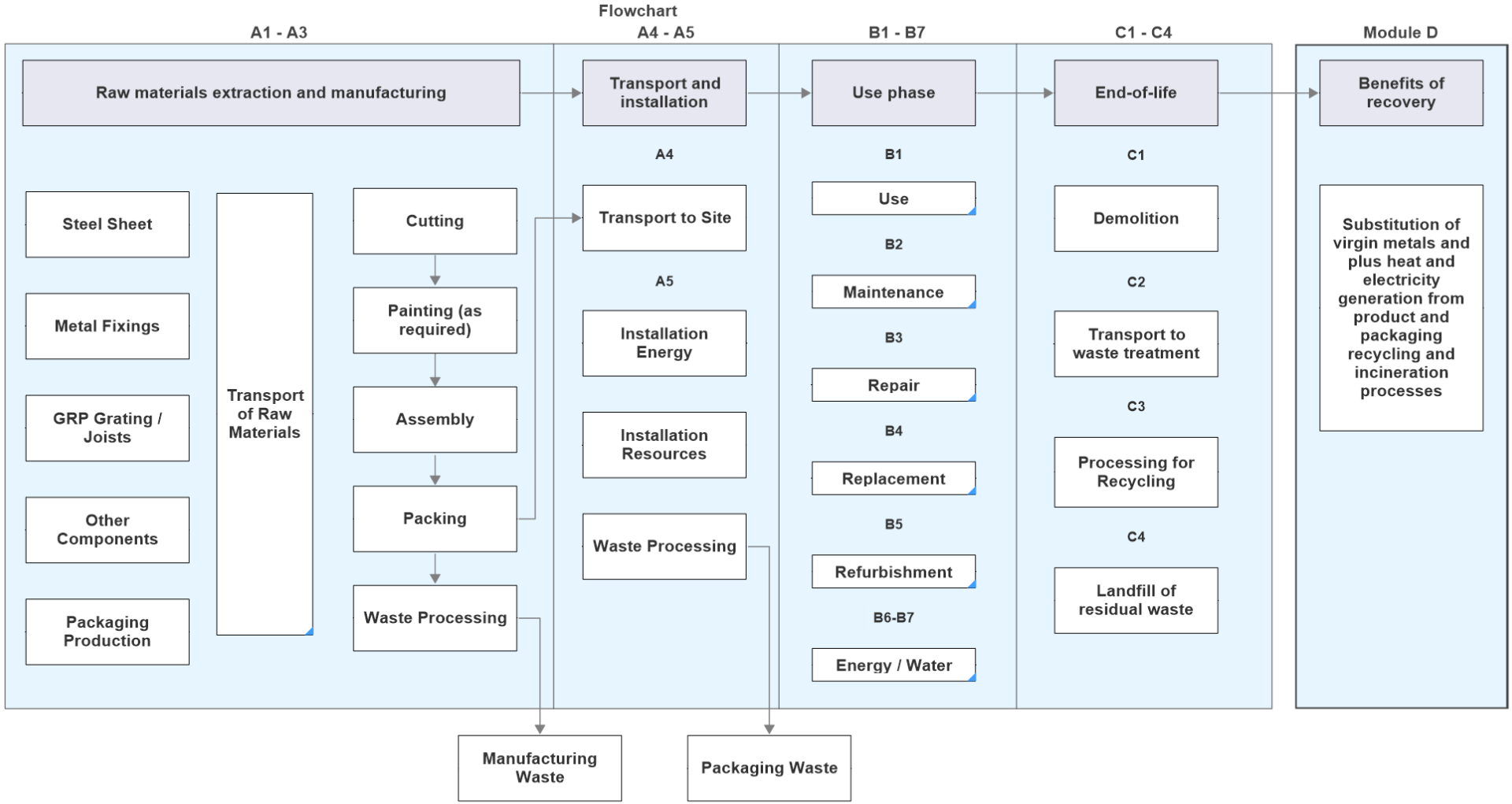
The product is assumed to remain in place for the life of the building. At the end-of-life of the building the product is assumed to be removed through the demolition of the building and the materials collected with mixed construction waste.

Steel waste is assumed to be recycled at a rate of 93%, with 5% reused, and 2% for disposal (landfill or losses). Paint applied is assumed to be removed through the metal recycling processes.

GRP waste is conservatively assumed to reach landfill with no benefits. Small quantities of plastic waste from endcaps are also assumed to reach landfill with no benefits.

Module D accounts for the benefits from the recycling of steel as an avoided impact (avoiding the need for the production of virgin steel through the provision of recyclates to subsequent product life cycles). The load of the recycling process is included in the calculation. To avoid double counting, secondary material content in the steel has been deducted prior to calculating the benefits. The reused steel is also counted as a benefit. The recycling and energy recovery from incineration of product packaging is also included as a Module D benefit.

SYSTEM BOUNDARY DIAGRAM



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.

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	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	No allocation

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products and multiple factories
Grouping method	Representative product
Variation in GWP-fossil for A1-A3, %	-14% / +44%

Grouping within this EPD is based on an average of multiple products and multiple factories. First a representative product has been modelled to calculate the base case / midpoint. Then the mass and energy flows have been adjusted to create minimum (best case) and maximum (worst case) options within the average. For each of these three models a scenario involving

production at the manufacturing facility in Hatton, UK and the manufacturing facility in Leicester, UK were created and then weighted according to actual production / output volumes during the reference year.

In order to create a representative average, the following product systems were considered:

- 3mm brackets with 140mm frame height and standard mesh grating with GRP thickness of 38mm and weight of 19.5 kg/m2 (taken to be the **minimum** case product system for GWP fossil)

- 3mm brackets with 150mm frame height and solid top grating with GRP height of 38mm and weight of 24.2 kg/m2 (the **midpoint** / **base case**)

- 4mm brackets with 300mm frame height and mini mesh GRP grating with a thickness of 38mm and weight of 32 kg/m2. Includes 150mm extended bottom flange (taken to be the **maximum** case product system for GWP fossil)

The base case product system was selected as highly typical due to its typical raw material composition and typical GWP (fossil) content within the possible combination of components. The GRP grating within the base case has been modelled as solid top grating with GRP height of 38mm and weight of 24.2 kg/m2

The combination of components within this average share an equivalent purpose (riser systems). Product systems within this range have very similar raw material composition.

For AlphaRiser®, the variance against the base case GWP fossil (A1-A3) is shown below:

MAX GWP (Fossil) value: 212.09 kg CO_2e / m^2
MIN GWP (Fossil) value: 127.04 kg CO_2e / m^2
Base Case Product System (Fossil) value: 147.64 kg CO_2e / m^2

Variance from base case product (max +/- 50%):

+ 44 % Max
- 14 % Min

Note: The results of this EPD are averaged for Modules A1-A3 only. All other modules (A4-C4, D) the results are based on the midpoint / base case product.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub v3.2.3. 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‘

End of life scenarios for product have been taken from RICS v2, Section 5.6.1 on End-of-Life Scenarios.

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	1.50E+02	7.85E+00	4.06E+00	1.62E+02	3.80E+00	2.24E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E-02	3.80E-01	2.95E-01	2.46E+00	-1.71E+01
GWP – fossil	kg CO_2e	1.50E+02	7.85E+00	4.95E+00	1.62E+02	3.80E+00	1.34E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.60E-02	3.80E-01	2.95E-01	2.46E+00	-1.68E+01
GWP – biogenic	kg CO_2e	1.63E-01	1.43E-03	-8.93E-01	-7.29E-01	8.29E-04	8.96E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.68E-06	7.63E-05	-6.26E-04	-1.23E-04	-2.88E-01
GWP – LULUC	kg CO_2e	1.22E-01	3.73E-03	3.34E-03	1.29E-01	1.48E-03	1.02E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.69E-06	1.36E-04	3.64E-04	6.39E-05	-6.32E-03
Ozone depletion pot.	kg CFC_{-11}e	4.98E-05	1.35E-07	1.04E-07	5.01E-05	7.93E-08	9.74E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.52E-10	7.56E-09	3.97E-09	9.02E-09	-4.34E-08
Acidification potential	mol H^+e	1.34E+00	1.39E-01	2.54E-02	1.50E+00	8.96E-03	2.56E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.25E-04	7.90E-04	3.51E-03	1.85E-03	-5.94E-02
EP-freshwater[2)]	kg Pe	4.71E-02	3.76E-04	9.35E-04	4.84E-02	2.65E-04	4.86E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.04E-06	2.56E-05	1.90E-04	1.84E-05	-5.59E-03
EP-marine	kg Ne	1.99E-01	3.48E-02	8.11E-03	2.42E-01	2.35E-03	1.20E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-04	1.90E-04	7.77E-04	5.59E-02	-1.29E-02
EP-terrestrial	mol Ne	4.12E+00	3.86E-01	8.73E-02	4.59E+00	2.54E-02	1.13E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.65E-03	2.05E-03	8.78E-03	8.21E-03	-1.38E-01
POCP ("smog")[3)]	kg NMVOCe	7.02E-01	1.12E-01	3.21E-02	8.47E-01	1.56E-02	3.94E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.93E-04	1.32E-03	2.60E-03	3.69E-03	-4.91E-02
ADP-minerals & metals[4)]	kg Sbe	5.46E-01	1.41E-05	2.45E-05	5.46E-01	1.09E-05	1.49E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-08	1.26E-06	2.09E-05	6.13E-07	-4.26E-06
ADP-fossil resources	MJ	2.19E+03	1.05E+02	9.60E+01	2.39E+03	5.70E+01	7.46E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.72E-01	5.34E+00	3.96E+00	6.32E+00	-1.55E+02
Water use[5)]	m^3e depr.	5.79E+01	4.11E-01	1.57E+00	5.99E+01	2.92E-01	1.61E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-03	2.66E-02	7.12E-02	4.45E-02	-1.39E+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, 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	1.50E-05	4.58E-07	5.08E-07	1.60E-05	3.70E-07	5.90E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.25E-09	2.80E-08	4.77E-08	4.36E-08	-1.16E-06
Ionizing radiation[6)]	kBq U235e	2.32E+01	8.58E-02	3.01E-01	2.36E+01	6.88E-02	1.89E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-04	6.89E-03	3.36E-02	1.04E-02	7.98E-01
Ecotoxicity (freshwater)	CTUe	1.83E+03	1.00E+01	3.17E+01	1.87E+03	6.72E+00	1.03E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.60E-02	7.11E-01	2.31E+00	7.37E+00	-4.00E+01
Human toxicity, cancer	CTUh	1.54E-07	1.51E-09	2.14E-09	1.58E-07	6.33E-10	1.18E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.71E-12	6.38E-11	2.63E-10	9.95E-11	2.38E-08
Human tox. non-cancer	CTUh	4.44E-06	4.60E-08	3.06E-08	4.52E-06	3.69E-08	4.02E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.87E-11	3.38E-09	1.79E-08	1.48E-08	1.27E-07
SQP[7)]	-	4.51E+02	5.42E+01	1.32E+02	6.38E+02	5.74E+01	1.53E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.30E-02	3.23E+00	7.70E+00	1.53E+01	-2.86E+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	1.13E+02	1.24E+00	1.22E+01	1.27E+02	9.29E-01	-8.76E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-03	9.36E-02	7.38E-01	1.96E-01	1.64E+01
Renew. PER as material	MJ	6.93E-03	0.00E+00	7.86E+00	7.87E+00	0.00E+00	-7.86E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.79E-03	-1.39E-04	2.52E+00
Total use of renew. PER	MJ	1.13E+02	1.24E+00	2.01E+01	1.34E+02	9.29E-01	-1.66E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-03	9.36E-02	7.31E-01	1.96E-01	1.90E+01
Non-re. PER as energy	MJ	1.91E+03	1.05E+02	6.98E+01	2.09E+03	5.70E+01	-2.66E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.72E-01	5.34E+00	3.96E+00	-9.64E+02	-1.55E+02
Non-re. PER as material	MJ	2.72E+02	0.00E+00	1.05E+00	2.73E+02	0.00E+00	-2.54E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.61E-03	-2.47E+02	1.36E+01
Total use of non-re. PER	MJ	2.19E+03	1.05E+02	7.09E+01	2.36E+03	5.70E+01	-5.20E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.72E-01	5.34E+00	3.95E+00	-1.21E+03	-1.41E+02
Secondary materials	kg	5.47E+00	4.80E-02	5.20E-02	5.57E+00	2.47E-02	3.38E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.96E-04	2.48E-03	4.83E-03	2.50E-03	1.27E+01
Renew. secondary fuels	MJ	1.08E-02	3.33E-04	2.28E-01	2.39E-01	3.11E-04	6.03E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.12E-07	3.14E-05	2.24E-04	4.24E-05	2.58E-04
Non-ren. secondary fuels	MJ	6.50E-03	0.00E+00	0.00E+00	6.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	1.17E+00	1.12E-02	3.83E-02	1.22E+00	8.42E-03	1.87E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.12E-05	7.28E-04	2.10E-03	-1.20E-01	-1.69E-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	2.40E+01	1.46E-01	2.82E-01	2.44E+01	8.25E-02	2.12E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.25E-04	7.77E-03	2.59E-02	9.35E-03	1.92E+00
Non-hazardous waste	kg	3.12E+02	2.45E+00	1.06E+01	3.25E+02	1.65E+00	4.47E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.15E-03	1.64E-01	9.34E-01	1.54E+02	-4.20E+01
Radioactive waste	kg	1.82E-03	2.11E-05	6.85E-05	1.91E-03	1.70E-05	4.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.12E-08	1.71E-06	8.60E-06	2.44E-06	1.78E-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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.02E-01	0.00E+00	0.00E+00
Materials for recycling	kg	2.66E-03	0.00E+00	1.81E+00	1.81E+00	0.00E+00	5.23E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E+01	0.00E+00	0.00E+00
Materials for energy rec	kg	3.15E-04	0.00E+00	0.00E+00	3.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	2.37E-04	0.00E+00	0.00E+00	2.37E-04	0.00E+00	5.73E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	2.41E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	3.32E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	1.48E+02	7.81E+00	4.92E+00	1.61E+02	3.77E+00	1.35E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.59E-02	3.77E-01	2.94E-01	2.35E+00	-1.66E+01
Ozone depletion Pot.	kg CFC_{-11}e	3.37E-05	1.07E-07	8.46E-08	3.39E-05	6.30E-08	8.04E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.37E-10	6.02E-09	3.26E-09	7.19E-09	-4.25E-08
Acidification	kg SO_2e	9.54E-01	1.11E-01	1.95E-02	1.09E+00	7.11E-03	1.86E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.29E-04	6.35E-04	2.82E-03	1.35E-03	-4.81E-02
Eutrophication	kg PO_4^3e	6.50E-01	1.31E-02	7.49E-02	7.38E-01	1.78E-03	6.47E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.34E-05	1.60E-04	4.09E-04	1.59E-03	-9.15E-03
POCP (“smog”)	kg C_2H_4e	6.13E-02	5.84E-03	1.63E-03	6.88E-02	7.25E-04	2.07E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.71E-05	6.72E-05	1.67E-04	4.69E-04	-8.48E-03
ADP-elements	kg Sbe	5.48E-01	1.38E-05	2.42E-05	5.48E-01	1.06E-05	1.46E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.26E-08	1.24E-06	2.08E-05	5.91E-07	-4.76E-06

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADP-fossil	MJ	2.06E+03	1.04E+02	9.17E+01	2.26E+03	5.59E+01	7.14E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.68E-01	5.23E+00	3.37E+00	6.15E+00	-1.68E+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	1.50E+02	7.85E+00	4.95E+00	1.62E+02	3.80E+00	1.34E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E-02	3.80E-01	2.95E-01	2.46E+00	-1.68E+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.

SCENARIO DOCUMENTATION

Note: scenario documentation is based on base case / midpoint product system within this average EPD, viz.: 3mm brackets with 150mm frame height and standard mesh grating with GRP height of 30mm and weight of 14.6 kg/m2.

Manufacturing energy scenario documentation – A3

Scenario parameter	Value
Electricity data source and quality	Combination of on-site PV, medium voltage electricity drawn from the UK grid and medium voltage electricity from renewable sources backed by guarantees of origin.
Electricity CO2e / kWh	On-site PV - 0.0921 kg CO2e / kWh Medium voltage electricity from renewable sources backed by Guarantees of Origin - 0.25 kg CO2e / kWh Medium voltage electricity drawn from the UK grid - 0.44 kg CO2e / kWh
District heating data source and quality	Not applicable
District heating CO2e / kWh	Not applicable

Transport scenario documentation A4

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	Transport, freight, lorry >32 metric ton, EURO6 - Europe
Average transport distance, km	871
Capacity utilization (including empty return) %	50
Bulk density of transported products	Assumed bulk density of stacked, packed and shipped AlphaRiser units is 215kg/m3 based on a frame height of 150mm and 92% void space.
Volume capacity utilization factor	0.5

Installation scenario documentation - A5 (Installation waste)

Scenario information	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	The following materials are applied as a temporary protection for the product during the building construction phase: Flame retardant protection board (polypropylene-based) - 0.7kg / m2 Light oil coating for unprotected steel surfaces - 0.014 kg / m2 Polyethylene Foam Protection - 0.048 kg / m2
Water use / m^3	0
Other resource use / kg	0
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	Quantity of diesel assumed to be used in tower cranes based on scenario where 22% of projects require use of a crane with a power rating of 30kW and a lift time of 5 minutes including time to lift risers off trucks and into place on the steelwork equivalent to 1.98 MJ.
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	Plastic Packaging Waste Materials (including installation resources as ancillary materials) - 0.794 kg Steel Packaging Waste Materials - 0.004 kg Wood Packaging Waste Materials - 0.625 kg
Output materials (specified by type) as result of waste processing at the building site e.g. collection for recycling, for energy recovery, disposal (specified by route) / kg	**Plastic Packaging Waste Materials (including installation resources as ancillary materials)** - Collection for recycling - 40% - 0.318 kg - Incineration with Energy Recovery - 37% - 0.293 kg - Disposal (landfill) - 23% - 0.183 kg **Steel Packaging Waste Materials** - Collection for recycling - 81% - 0.003kg - Disposal (landfill) - 19% - 0.001kg **Wood Packaging Waste Materials** - Collection for recycling - 32% - 0.2 kg - Incineration with Energy Recovery - 30% - 0.188 kg - Disposal (landfill) - 38% - 0.237 kg

Direct emissions to ambient air, soil and water / kg	Not applicable

Use stages scenario documentation - B2 Maintenance

Scenario information	Value
Maintenance process / Description or source where description can be found	0
Maintenance cycle / Number per RSL or year *(Not applicable if only B2 is declared)*	0
Ancillary materials for maintenance, e.g. cleaning agent, specify materials / kg / cycle	0
Waste material resulting from maintenance (specify materials) / kg	0
Net freshwater consumption during maintenance / m^3	0
Energy input during maintenance, e.g. vacuum cleaning, energy carrier type, e.g. electricity, and amount, if applicable and relevant / kWh	0

Use stages scenario documentation - B3 Repair

Scenario information	Value
Repair process / Description or source where description can be found	0
Inspection Process / Description or source where description can be found	0
Repair cycle / Number per RSL or year	0
Ancillary materials, e.g., lubricant (specify materials) / kg or kg/cycle	0
Waste material resulting from repair (specify materials) / kg	0
Net freshwater consumption during repair / m^3	0
Energy input during repair, e.g., crane activity, energy carrier type, e.g., electricity, and amount / kWh/RSL, kWh/cycle	0

Use stages scenario documentation - B4 Replacement

Scenario information	Value
Replacement cycle / Number per RSL or year	0
Energy input during replacement, e.g., crane activity, energy carrier type, e.g., electricity and amount (if applicable and relevant) / kWh	0
Exchange of worn parts during the product's life cycle, e.g., zinc galvanized steel sheet (specify materials) / kg	0

Use stages scenario documentation - B5 Refurbishment

Scenario information	Value
Refurbishment process / Description or source where description can be found	0
Refurbishment cycle / Number per RSL or year	0
Energy input during refurbishment, e.g., crane activity, energy carrier type, e.g., electricity, and amount (if applicable and relevant) / kWh	0
Material input for refurbishment, e.g., bricks, including ancillary materials for the refurbishment process, e.g., lubricant (specify materials) / kg or kg/cycle	0
Waste material resulting from refurbishment (specify materials) / kg	0
Further assumptions for scenario development, e.g., frequency and time period of use, number of occupants / Units as appropriate	0

Use stages scenario documentation - B6-B7 Use of energy and use of water

Scenario information	Value
Ancillary materials specified by material / kg or units as appropriate	0
Net freshwater consumption / m^3	0
Type of energy carrier, e.g., electricity, natural gas, district heating / kWh	0
Power output of equipment / kW	0
Characteristic performance, e.g., energy efficiency, emissions, variation of performance with capacity utilization, etc.	0
Further assumptions for scenario development, e.g., frequency and period of use, number of occupants	0

End of life scenario documentation

Scenario information	Value
Collection process – kg collected separately	0 kg
Collection process – kg collected with mixed waste	40.73 kg
Recovery process – kg for re-use	0.7 kg
Recovery process – kg for recycling	13.05 kg
Recovery process – kg for energy recovery	0 kg
Disposal (total) – kg for final deposition	26.98 kg
Scenario assumptions e.g. transportation	Assumed transport distance to waste treatment / disposal is 50km via Transport, freight, lorry >32 metric ton, EURO6 - Europe (average laden vehicle)

NON-LINEAR SCALING TABLE

The declared unit in this EPD is 1m^2 of riser system. The product contains some components that scale with system area and some components that are constant irrespective of area. The fixed items which are constant per system include fixings, brackets and end-cap. The scalable items which are proportional to area include steel frame, GRP joist and GRP grating. Because the fixed items do not scale linearly with area, the following correction factors must be applied when calculating the impact of any given surface area of AlphaRiser® system.

The table below applies to the indicator GWP-Fossil, specifically modules A1-A3. To apply the correction factor, the GWP-Fossil impacts should be multiplied by the area (m^2) and the correction factor.

Area (m^2)	Correction Factor
0.25	1.129
0.5	1.043
0.75	1.014
1	1.000
1.25	0.991
1.5	0.986
1.75	0.982
2	0.979
2.25	0.976
2.5	0.974
2.75	0.973
3	0.971
3.25	0.970
3.5	0.969
3.75	0.969
4	0.968
4.25	0.967
4.5	0.967
4.75	0.966
5	0.966
6	0.964
7	0.963
8	0.962
9	0.962
10	0.961

The results of the scaling table above have been checked against an additional LCA model with a declared unit of 2m^2 to confirm accuracy of correction factors.

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez
Tool verification validity: 27 March 2025 - 26 March 2028

Imane Uald Lamkaddam as an authorized verifier for EPD Hub Limited
16.01.2026