



ELLIS

Holding Power

ENVIRONMENTAL PRODUCT DECLARATION

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

STAINLESS STEEL CABLE CLEATS
 EPD HUB, HUB-1300 Publishing on 12.04.2024,
 last updated on 12.04.2024, valid until 12.04.2029



GENERAL INFORMATION

MANUFACTURER

Manufacturer	Ellis Patents
Address	High Street, Rillington, Malton, North Yorkshire, YO17 8LA, United Kingdom
Contact details	sales@ellispatents.co.uk
Website	https://www.ellispatents.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 1.0, 1 Feb 2022
Sector	Manufactured product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Matthew Macfarlane
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
EPD verifier	Haiha Nguyen, 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	Stainless Steel Cable Cleats
Additional labels	Vulcan+, Emperor, FlexiStrap, Colossus
Product reference	-
Place of production	ELLIS Patents Factory located in Rillington, United Kingdom
Period for data	1st November 2022 - 31st October 2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	14.0%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	5.52E+00
GWP-total, A1-A3 (kgCO ₂ e)	5.39E+00
Secondary material, inputs (%)	45.4
Secondary material, outputs (%)	94.3
Total energy use, A1-A3 (kWh)	18.7
Total water use, A1-A3 (m ³ e)	0.05

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Ellis is widely recognised as a global leader in the design and manufacture of safety-critical electrical cable cleats, cable hangers, clips, and fixings as well as bespoke solutions for individual project specifications.

Our products are installed across a broad spectrum of industries, from nuclear power plants to wind farms and oil rigs, city centre substations to major rail, road and air transport infrastructure projects.

Our manufacturing headquarters in North Yorkshire, England are ISO9001, ISO45001 and ISO14001 certified and all our cable cleats are manufactured to IEC 61914 and short circuit tested as standard before being brought to the market.

PRODUCT DESCRIPTION

Standard Duty Compact Stainless Steel Cable Cleats, for cables in single, trefoil or quad formation. Ellis cable cleats has been designed, developed, tested and manufactured in accordance with IEC 61914 (cable cleats for electrical installations).

The cleats are available in a range of sizes with range taking ability to suit single cables, cables in trefoil formation or cables in quad formation. The frame of the cleat is manufactured from corrosion resistant 316L grade stainless steel, the cable is supported by a liner manufactured from a low smoke zero halogen (LSOH) material.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	66.83	Europe & Far East
Minerals	-	-
Fossil materials	33.17	United Kingdom
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	-
Biogenic carbon content in packaging, kg C	0.03

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg
Mass per declared unit	1 kg
Functional unit	-
Reference service life	Experience shows 25+ years in a Marine Environment. Backed up by data from the British Stainless Steel Association

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	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.

Raw materials consist of 316L / A4 grade stainless steel and a low smoke zero halogen (LSOH) polymer. The distance between the exact manufacturing location and the ELLIS Patents factory have been determined. Distances for the transportation of raw materials consist of lorry and sea freight. The manufacturing of the stainless steel frame includes several process steps including slitting, dressing, cutting, punching, forming and spot welding. The LSOH polymer parts are formed through injection moulding.

Metal waste generated at sub-contractors (outside the system boundary) is included for completeness. All metal waste is sent to recycling facilities. All distances from the gate of a company to the end of waste facilities is assumed to equal 50 km. Solar power generates some of the electricity required for injection moulding, metal work and assembly of the cleats. The assembled cable cleats are packaged in fully recyclable cardboard boxes with cardboard layer cards and installation instructions. The boxes are typically loaded onto a wooden pallet and wrapped in PE film.

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 average distance from the Ellis Patents factory to the installation site is assumed to equal 1,248 km by lorry and 1,850 km by sea freight based on 1 year of sales data. Transportation does not cause losses as the cleats are packaged properly.

The cable cleats can easily be assembled by hand with a ratchet. However, for completeness, it is assumed that a small electric power tool is used. The electricity required to assemble 1 kg cable cleats is included. This is an incredibly small value due to the products having a single set of easy to assemble fixings. All of the packaging materials are fully recyclable.

PRODUCT USE AND MAINTENANCE (B1-B7)

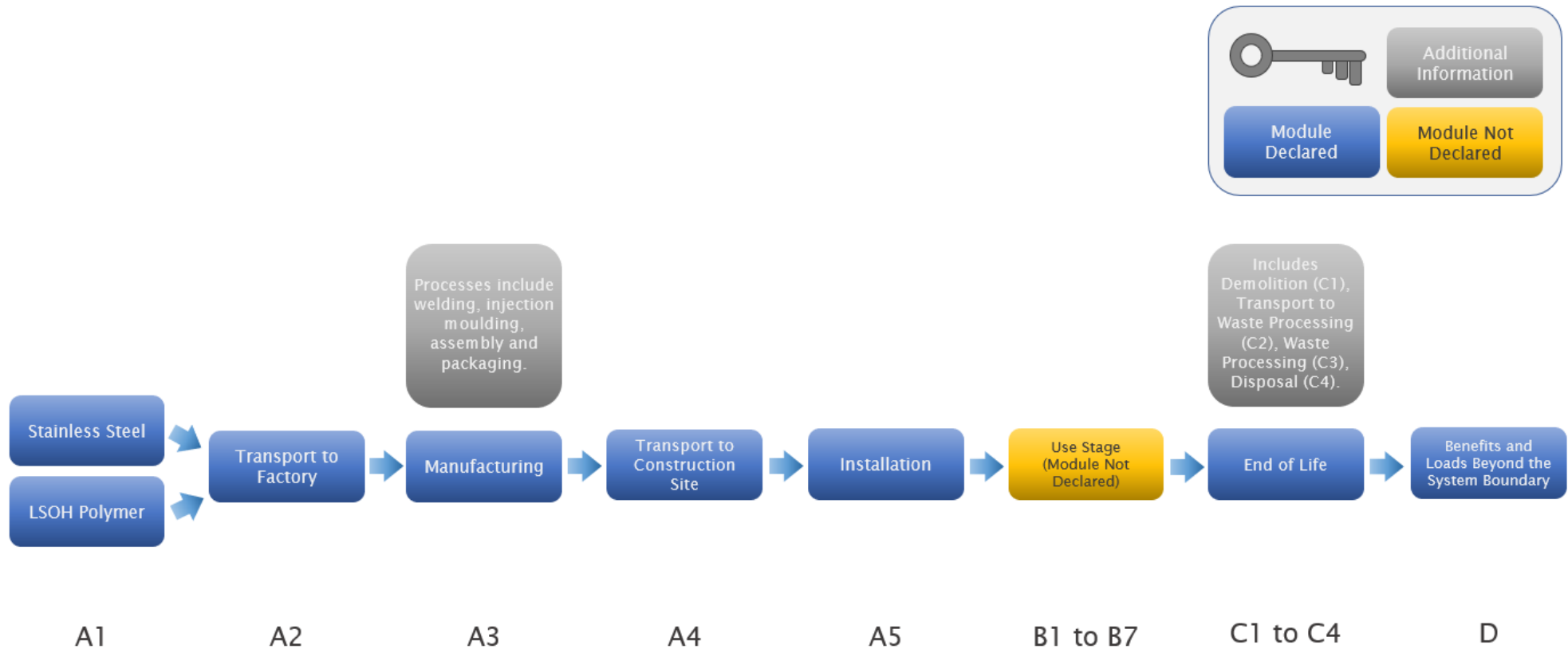
This EPD does not cover the use phase. Once installed, the cleats remain in place until their end of life and require no maintenance. Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

Disassembly of the cleats, with a small electric power tool, is assumed to consume the same amount of electricity required to assemble the cleats in module A5. Transportation distances from product disassembly to waste

processing / landfill is assumed to equal 50 km by lorry. Based on data from the World Steel Organisation, 95% stainless steel parts are assumed to be recycled and 5% sent to landfill. Based on UK national statistics on waste provided by DEFRA, 93% polymer parts are assumed to be recycled and 7% sent to landfill.

MANUFACTURING PROCESS AND SYSTEM BOUNDARY



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	No allocation
Manufacturing energy and waste	Allocated by revenue

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Representative product
Variation in GWP-fossil for A1-A3	14.0%

The representative product has been chosen based on sales data. The best-selling stainless steel cable cleat was chosen.

All products included in this average EPD are all made from a 316L stainless steel frame, LSOH polymer liners and A4 stainless steel fixings. Emperor and Colossus products contain a small head retainer made from Nylon 6. The only other differences between the products are their sizes, shapes and weights.

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-B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	4.88E+00	2.13E-01	3.01E-01	5.39E+00	1.45E-01	1.35E-01	MND	4.43E-05	4.69E-03	6.56E-02	3.56E-03	-5.54E-01
GWP – fossil	kg CO ₂ e	4.87E+00	2.13E-01	4.33E-01	5.52E+00	1.45E-01	1.93E-03	MND	4.41E-05	4.69E-03	6.55E-02	3.56E-03	-5.54E-01
GWP – biogenic	kg CO ₂ e	0.00E+00	0.00E+00	-1.33E-01	-1.33E-01	0.00E+00	1.33E-01	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP – LULUC	kg CO ₂ e	6.90E-03	1.14E-04	7.52E-04	7.76E-03	6.04E-05	1.94E-06	MND	1.03E-07	1.73E-06	4.97E-05	2.15E-07	-6.58E-05
Ozone depletion pot.	kg CFC ₁₁ e	2.44E-07	4.55E-08	6.68E-08	3.57E-07	3.28E-08	1.38E-10	MND	2.24E-12	1.08E-09	2.77E-09	1.43E-10	-1.05E-08
Acidification potential	mol H ⁺ e	2.65E-02	3.35E-03	1.81E-03	3.17E-02	1.15E-03	8.73E-06	MND	2.52E-07	1.99E-05	2.61E-04	3.36E-06	-1.88E-03
EP-freshwater ²⁾	kg Pe	1.98E-04	1.37E-06	1.09E-05	2.10E-04	1.10E-06	6.97E-08	MND	4.68E-09	3.84E-08	1.41E-06	3.54E-09	-3.44E-06
EP-marine	kg Ne	4.42E-03	8.50E-04	4.01E-04	5.67E-03	3.09E-04	2.16E-06	MND	3.34E-08	5.90E-06	6.18E-05	1.80E-06	-3.28E-04
EP-terrestrial	mol Ne	4.97E-02	9.44E-03	4.04E-03	6.32E-02	3.43E-03	2.16E-05	MND	3.80E-07	6.51E-05	6.89E-04	1.33E-05	-3.69E-03
POCP (“smog”) ³⁾	kg NMVOCe	1.66E-02	2.53E-03	1.08E-03	2.02E-02	9.94E-04	6.92E-06	MND	1.04E-07	2.08E-05	1.97E-04	4.57E-06	-1.93E-03
ADP-minerals & metals ⁴⁾	kg Sbe	1.08E-04	5.10E-07	2.46E-06	1.11E-04	3.22E-07	2.03E-08	MND	4.06E-10	1.10E-08	2.17E-06	1.08E-09	-4.13E-06
ADP-fossil resources	MJ	4.87E+01	2.94E+00	3.42E+00	5.51E+01	2.14E+00	2.06E-02	MND	9.35E-04	7.05E-02	3.42E-01	9.94E-03	-2.03E+01
Water use ⁵⁾	m ³ e depr.	2.24E+00	1.15E-02	1.20E-01	2.37E+00	9.20E-03	4.17E-04	MND	2.48E-05	3.15E-04	1.03E-02	6.30E-05	-2.73E-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-B7	C1	C2	C3	C4	D
Particulate matter	Incidence	3.53E-07	1.48E-08	1.29E-08	3.81E-07	1.52E-08	4.84E-10	MND	8.24E-13	5.41E-10	4.61E-09	7.09E-11	-1.95E-08
Ionizing radiation ⁶⁾	kBq U235e	4.18E-01	1.38E-02	2.83E-01	7.14E-01	1.01E-02	2.48E-04	MND	2.51E-05	3.36E-04	3.75E-03	5.36E-05	-7.13E-03
Ecotoxicity (freshwater)	CTUe	1.41E+02	2.38E+00	7.03E+00	1.51E+02	1.86E+00	2.37E-01	MND	6.36E-04	6.34E-02	1.31E+00	7.73E-03	-1.40E+00
Human toxicity, cancer	CTUh	8.95E-08	9.78E-11	2.15E-10	8.98E-08	5.33E-11	5.11E-12	MND	2.08E-14	1.56E-12	9.58E-11	2.31E-13	-1.54E-10
Human tox. non-cancer	CTUh	1.11E-07	2.05E-09	4.84E-09	1.18E-07	1.79E-09	4.75E-11	MND	6.84E-13	6.27E-11	1.73E-09	4.63E-12	-3.29E-09
SQP ⁷⁾	-	2.46E+01	1.74E+00	1.02E+01	3.66E+01	2.22E+00	1.45E-02	MND	1.70E-04	8.12E-02	6.74E-01	2.39E-02	-2.19E+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-B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	1.07E+01	2.95E-02	1.61E+00	1.23E+01	2.30E-02	2.06E-03	MND	1.85E-04	7.94E-04	5.17E-02	2.75E-04	-8.22E-01
Renew. PER as material	MJ	0.00E+00	0.00E+00	1.16E+00	1.16E+00	0.00E+00	-1.16E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renew. PER	MJ	1.07E+01	2.95E-02	2.77E+00	1.35E+01	2.30E-02	-1.16E+00	MND	1.85E-04	7.94E-04	5.17E-02	2.75E-04	-8.22E-01
Non-re. PER as energy	MJ	4.87E+01	2.94E+00	3.33E+00	5.50E+01	2.14E+00	2.06E-02	MND	9.33E-04	7.05E-02	3.42E-01	9.94E-03	-7.23E+00
Non-re. PER as material	MJ	0.00E+00	0.00E+00	9.13E-02	9.13E-02	0.00E+00	-9.13E-02	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-re. PER	MJ	4.87E+01	2.94E+00	3.42E+00	5.51E+01	2.14E+00	-7.07E-02	MND	9.33E-04	7.05E-02	3.42E-01	9.94E-03	-7.23E+00
Secondary materials	kg	4.54E-01	1.08E-03	5.01E-02	5.05E-01	6.35E-04	3.29E-05	MND	9.53E-08	1.96E-05	1.23E-03	2.96E-06	3.26E-01
Renew. secondary fuels	MJ	1.27E-03	8.24E-06	2.15E-02	2.28E-02	5.61E-06	1.56E-07	MND	7.78E-10	1.97E-07	1.92E-05	1.15E-07	-7.38E-06
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m ³	5.05E-02	2.98E-04	1.48E-03	5.23E-02	2.61E-04	1.16E-05	MND	7.89E-07	9.13E-06	2.76E-04	1.19E-05	-6.83E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Hazardous waste	kg	3.91E+00	4.07E-03	6.05E-03	3.92E+00	2.84E-03	1.65E-04	MND	3.36E-06	9.34E-05	4.61E-03	0.00E+00	-1.06E-02
Non-hazardous waste	kg	7.55E+00	5.41E-02	1.45E-01	7.75E+00	4.40E-02	3.26E-03	MND	2.14E-04	1.54E-03	8.89E-02	5.66E-02	-1.08E-01
Radioactive waste	kg	1.34E-04	2.00E-05	2.02E-05	1.74E-04	1.44E-05	1.04E-07	MND	6.77E-09	4.71E-07	1.80E-06	0.00E+00	-3.76E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1-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	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	1.05E-01	1.05E-01	0.00E+00	8.00E-02	MND	0.00E+00	0.00E+00	9.43E-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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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-B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO ₂ e	4.19E+00	2.11E-01	4.34E-01	4.84E+00	1.44E-01	2.98E-03	MND	4.37E-05	4.64E-03	6.46E-02	2.91E-03	-5.15E-01
Ozone depletion Pot.	kg CFC ₁₁ e	1.85E-07	3.61E-08	5.51E-08	2.76E-07	2.60E-08	1.14E-10	MND	1.94E-12	8.55E-10	2.30E-09	1.13E-10	-9.22E-09
Acidification	kg SO ₂ e	1.98E-02	2.67E-03	1.45E-03	2.39E-02	9.05E-04	6.98E-06	MND	2.14E-07	1.54E-05	2.08E-04	2.51E-06	-1.57E-03
Eutrophication	kg PO ₄ ³ e	7.25E-03	3.46E-04	5.33E-04	8.13E-03	1.49E-04	1.41E-05	MND	1.64E-07	3.52E-06	2.20E-04	1.30E-04	-2.01E-04
POCP ("smog")	kg C ₂ H ₄ e	1.03E-03	7.46E-05	7.36E-05	1.18E-03	2.88E-05	9.85E-07	MND	8.74E-09	6.03E-07	1.07E-05	5.39E-07	-1.73E-04
ADP-elements	kg Sbe	1.07E-04	4.98E-07	3.20E-06	1.11E-04	3.13E-07	2.01E-08	MND	4.06E-10	1.07E-08	2.17E-06	1.05E-09	-4.13E-06
ADP-fossil	MJ	4.87E+01	2.94E+00	1.09E+01	6.26E+01	2.14E+00	2.06E-02	MND	9.33E-04	7.05E-02	3.41E-01	9.93E-03	-2.03E+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.

HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited
12.04.2024



ANNEX

Below is a list of stainless steel cable cleats by part number and their corresponding mass. Using the “GWP-total, A1-A3 (kg CO₂e)” value the carbon emissions attributed to each product has been determined below.

Vulcan+

Part No.	Product Mass (kg)	GWP total A1-A3 (kg CO ₂ e)
VRT+00	0.251	1.35
VRT+01	0.258	1.39
VRT+02	0.269	1.45
VRT+03	0.279	1.50
VRT+04	0.284	1.53
VRT+05	0.319	1.72
VRT+06	0.331	1.78
VRT+07	0.372	2.01
VRT+08	0.405	2.18
VRT+09	0.411	2.22
VRT+10	0.442	2.38
VRT+11	0.453	2.44
VRT+12	0.460	2.48
VRT+13	0.524	2.82
VRT+14	0.536	2.89
VRT+15	0.542	2.92
VRT+16	0.544	2.93
VRT+17	0.618	3.33
VRT+18	0.628	3.38
VRT+19	0.637	3.43
VRT+20	0.646	3.48

Vulcan+ Quad

Part No.	Product Mass (kg)	GWP total A1-A3 (kg CO ₂ e)
VRQ+01	0.284	1.53
VRQ+02	0.286	1.54
VRQ+03	0.318	1.71
VRQ+03A	0.326	1.76
VRQ+04	0.378	2.04
VRQ+05	0.452	2.44
VRQ+06	0.467	2.52
VRQ+07	0.523	2.82
VRQ+08	0.541	2.92
VRQ+09	0.581	3.13

Emperor Trefoil

Part No.	Product Mass (kg)	GWP total A1-A3 (kg CO ₂ e)
ER19-23	0.425	2.29
ER23-28	0.425	2.29
ER27-32	0.440	2.37
ER30-35	0.445	2.40
ER33-38	0.460	2.48
ER36-42	0.600	3.23
ER40-46	0.605	3.26
ER44-50	0.630	3.40
ER48-55	0.641	3.45
ER51-58	0.650	3.50
ER55-62	0.810	4.37
ER59-66	0.825	4.45
ER63-70	0.850	4.58
ER67-74	0.850	4.58
ER71-78	0.890	4.80
ER74-82	0.890	4.80
ER77-85	0.905	4.88
ER82-88	0.820	4.42
ER88-96	0.890	4.80
ER96-103	0.940	5.07
ER103-111	0.950	5.12
ER111-119	1.010	5.44
ER119-128	1.220	6.58

Emperor Single

Part No.	Product Mass (kg)	GWP total A1-A3 (kg CO ₂ e)
ES32-39	0.450	2.43
ES37-45	0.470	2.53
ES44-52	0.480	2.59
ES51-59	0.490	2.64
ES58-66	0.500	2.70
ES65-73	0.510	2.75
ES73-85	0.640	3.45
ES84-94	0.660	3.56
ES94-118	0.710	3.83
ES118-130	0.900	4.85
ES127-150	0.940	5.07

Emperor Quad

Part No.	Product Mass (kg)	GWP total A1-A3 (kg CO ₂ e)
EQ19-24	0.552	2.98
EQ24-28	0.423	2.28
EQ26-30	0.451	2.43
EQ31-36	0.620	3.34
EQ36-40	0.495	2.67
EQ40-45	0.773	4.17
EQ44-49	0.684	3.69

Flexi-Strap (Standard Duty Liner)

Part No.	Product Mass (kg)	GWP total A1-A3 (kg CO ₂ e)
FS24-34SDL	0.190	1.02
FS30-41SDL	0.195	1.05
FS37-47SDL	0.224	1.21
FS43-54SDL	0.260	1.40
FS50-60SDL	0.273	1.47
FS56-67SDL	0.303	1.63
FS63-73SDL	0.291	1.57
FS69-80SDL	0.347	1.87
FS72-85SDL	0.347	1.87
FS82-95SDL	0.373	2.01
FS92-105SDL	0.431	2.32
FS102-115SDL	0.452	2.44
FS112-125SDL	0.499	2.69
FS122-135SDL	0.532	2.87
FS132-145SDL	0.550	2.96

Flexi-Strap (Heavy Duty Liner)

Part No.	Product Mass (kg)	GWP total A1-A3 (kg CO ₂ e)
FS24-34HDL	0.219	1.18
FS30-41HDL	0.243	1.31
FS37-47HDL	0.268	1.44
FS43-54HDL	0.313	1.69
FS50-60HDL	0.344	1.85
FS56-67HDL	0.353	1.90
FS63-73HDL	0.391	2.11
FS69-80HDL	0.433	2.33
FS72-85HDL	0.425	2.29
FS82-95HDL	0.483	2.60
FS92-105HDL	0.523	2.82
FS102-115HDL	0.568	3.06
FS112-125HDL	0.633	3.41
FS122-135HDL	0.675	3.64
FS132-145HDL	0.719	3.88

Colossus

Part No.	Product Mass (kg)	GWP total A1-A3 (kg CO₂e)
COL24-29	0.604	3.26
COL27-32	0.623	3.36
COL30-36	0.639	3.44
COL34-41	0.690	3.72
COL39-47	0.734	3.96
COL45-54	0.913	4.92
COL52-62	0.996	5.37
COL60-72	1.063	5.73
COL69-83	1.590	8.57
COL79-95	1.700	9.16
COL91-109	1.900	10.24
COL105-126	3.030	16.33
COL122-146	3.270	17.63
COL142-170	3.680	19.84