

ENVIRONMENTAL PRODUCT DECLARATION

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

Glidevale Protect VC Foil Ultra
Building Product Design Ltd



EPD HUB, HUB-0658

Publishing date 25 August 2023, last updated on 26 October 2023, valid until 25 August 2028.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Building Product Design Ltd
Address	Building Product Design Ltd, 2 Brooklands Road, Sale, Cheshire, M33 3SS
Contact details	technical@glidevaleprotect.com
Website	www.glidevaleprotect.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 1.0, 1 Feb 2022
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with modules C1-C4, D
EPD author	Neena Chandramathy
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input type="checkbox"/> 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	Glidevale Protect VC Foil Ultra
Additional labels	
Product reference	
Place of production	Merthyr Tydfil and Pinxton, UK
Period for data	2021
Averaging in EPD	Multiple factories
Variation in GWP-fossil for A1-A3	2 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1m ²
Declared unit mass	0.148 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	6.35E-1
GWP-total, A1-A3 (kgCO ₂ e)	6.16E-1
Secondary material, inputs (%)	0.57
Secondary material, outputs (%)	5.53
Total energy use, A1-A3 (kWh)	3.14
Total water use, A1-A3 (m ³ e)	1.82E0

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Building Product Design is a leading building materials specialist, offering a comprehensive range of products for new build and refurbishment schemes across a variety of sectors including private residential, social housing, commercial and education sectors. Our products are tried, trusted and tested for both traditional build and offsite construction to deliver benefits including condensation control, thermal efficiency, airtightness, damp proofing, improved air quality, natural daylight and removal of moisture. A UK producer operating from two manufacturing facilities in Nottinghamshire and South Wales, Building Product Design offers superior performance and product innovation at the very heart of our business. With almost 40 years of experience and technical expertise, all our ranges supplied by our Glidevale Protect, Passivent and Kingfisher brands are designed and developed specifically for the UK and Irish market requirements under the ISO 9001 quality standard, with the company also accredited to the international health and safety standard ISO 45001 and the environmental standard ISO 14001. Our quality hallmarks, management systems and external product performance certification are complemented by the achievement of STA Assure Gold Level status to ensure complete customer assurance.

PRODUCT DESCRIPTION

Protect VC Foil Ultra is a robust, highly reflective air and vapour control layer (AVCL), offering low emissivity to enhance the thermal performance of walls, ceilings and floors. Fully independently certified by BM TRADA, the product is suitable for timber, masonry or steel construction and provides strong insulating properties when installed facing into a still airspace. This ensures significant thermal and performance benefits when compared with conventional vapour control materials. Offering excellent thermal resistance, this AVCL delivers a low emissivity solution with the reflective surface of the membrane facing into a still airspace, thereby helping to contribute to a low U-value for the wall element. Operating as a

radiant barrier, the use of Protect VC Foil Ultra helps to reflect heat back into the structure, minimising absorption and energy transfer, ensuring long term performance over the life cycle of the building. The product delivers an aged thermal resistance of 0.78m²K/W and 0.81 m²K/W for unaged thermal resistance (to BS EN ISO 8990 & BS EN 15976), incorporating printing onto the membrane. Produced in the UK of triple ply construction, Protect VC Foil Ultra is supplied with red branding to aid ease of installation on the warm side of the insulation. It can be paired with the Protect TF200 Thermo breather membrane on the cold side of the insulation to deliver optimum cost savings and the ultimate in thermal efficiency. Protect VC Foil Ultra is a flexible triple ply sheet material consisting of a black nonwoven core layer faced with pressure bonded aluminium foil. The product has been assessed as being a Type 'A' Vapour Control Layer in accordance with BS EN 13984. The product has a weight of 150g/m² and has the following characteristics: Resistance to water penetration to BS EN 1928 with mods - Class W1, water vapour resistance 4946 MNs/g / 989 Sd to BS EN 1931. Product is available in a selection of widths: 1.35, 1.5, 2.7, 3.0m x 50m and 2.7m x 100m.

Further information can be found at : www.glidevaleprotect.com/vcfoilultra

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	-	-
Minerals	-	-
Fossil materials	100	Africa
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	0.0038

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1m ²
Mass per declared unit	0.148 kg
Functional unit	
Reference service life	

SUBSTANCES, REACH - VERY HIGH CONCERN

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



PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries	
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
x	x	x	MND	MND	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x	
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol	Transport	Waste	Disposal	Reuse	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 3% material losses during electricity transmission. Manufacturing waste is externally recycled and the residues are landfilled.

Protect VC Foil Ultra is a flexible, multi layer laminated, low emissivity AVCL sheet comprising of a non-woven Polypropylene (PP) spun-bound fibre core , co-extruded low density polyethylene (LDPE) tie layer and a reflective aluminium foil surface that is laminated together. The PP spunbond and aluminium foil surface is purchased from supplier located in Africa as jumbo rolls. At the manufacturing facility, the rolls of PP spunbond are printed and converted into different rolls sizes and packed.

Individual rolls are packed in 17” lay flat tubes. Cardboard and Timber pallets are used to support the product while transporting. The packed rolls are sold to the market.

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.

As per the PCR the impacts from A4 & A5 are considered optional, hence it has been excluded in this LCA.

PRODUCT USE AND MAINTENANCE (B1-B7)

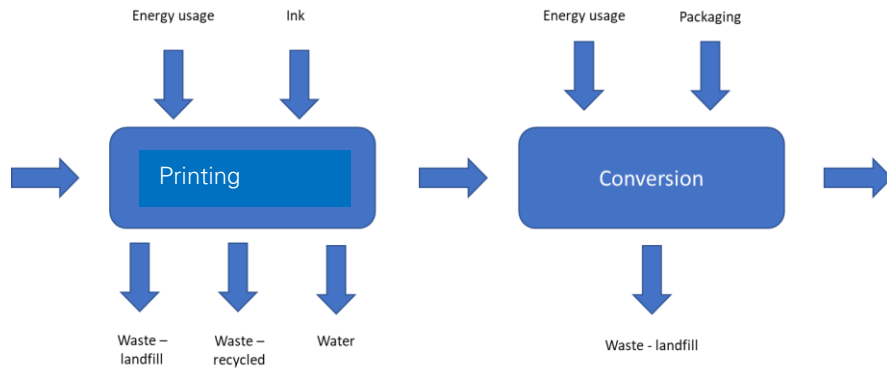
This EPD does not cover the use phase.

Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-c4, D)

Air and vapour control layers are typically not separated from construction waste and 100% of product is assumed to be sent to landfill. Since A5 is excluded , all the packaging materials end of life is considered in C3 & C4.The packaging waste scenario is assumed based on the UK Post-consumer plastics PACKAGING waste treatment trend {PLASTICS - THE FACTS 2022).

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

Production and sales information for relevant years collected for all Protect VC Foil Ultra product widths manufactured. Standard material basis weight of 0.148kg/sqm applied to achieve tonnages. Basis weights for all other products used to calculate factory annual tonnage. Assumed 3% production waste above produced rolls. Final packaging calculated from material weights and finished rolls produced. Packaging of raw materials has been calculated based on jumbo width used for conversion and a standard roll length of 2000lm. 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	Partly allocated by mass or volume
Packaging materials	Allocated by mass or volume
Ancillary materials	No allocation

Manufacturing energy and waste

Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	Multiple factories
Averaging method	Averaged by shares of total volume
Variation in GWP-fossil for A1-A3	2 %

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. Ecoinvent and One Click LCA databases were used 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	5.88E-1	3.21E-2	-4.36E-3	6.16E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	7.5E-4	1.17E-2	1.87E-2	-2.66E-1
GWP – fossil	kg CO ₂ e	5.88E-1	3.21E-2	1.48E-2	6.35E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	7.49E-4	2.07E-4	1.73E-2	-6.66E-2
GWP – biogenic	kg CO ₂ e	-1.28E-3	0E0	-1.92E-2	-2.04E-2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	2.9E-7	1.15E-2	1.31E-3	-2E-1
GWP – LULUC	kg CO ₂ e	1.31E-3	2.2E-5	4.77E-5	1.38E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	2.76E-7	3.26E-7	1.78E-6	-6.1E-6
Ozone depletion pot.	kg CFC ₁₁ e	3.8E-8	6.48E-9	2.36E-9	4.68E-8	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	1.72E-10	9.27E-12	4.77E-10	-7.09E-9
Acidification potential	mol H ⁺ e	2.26E-3	9.29E-4	8.47E-5	3.28E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	3.17E-6	1.09E-6	1.42E-5	-9.36E-5
EP-freshwater ²⁾	kg Pe	1.16E-5	1.33E-7	6.39E-7	1.24E-5	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	6.14E-9	1.06E-8	2.91E-8	-1.48E-7
EP-marine	kg Ne	4.2E-4	2.29E-4	2.25E-5	6.72E-4	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	9.43E-7	3.23E-7	2.25E-5	-1.47E-5
EP-terrestrial	mol Ne	4.58E-3	2.55E-3	1.72E-4	7.3E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	1.04E-5	2.57E-6	5.16E-5	-1.63E-4
POCP (“smog”) ³⁾	kg NMVOCe	1.7E-3	6.63E-4	5.17E-5	2.42E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	3.33E-6	8.28E-7	1.84E-5	-7.12E-5
ADP-minerals & metals ⁴⁾	kg Sbe	1.98E-6	4.82E-8	5.6E-8	2.08E-6	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	1.76E-9	2.98E-9	5.66E-9	-2.6E-8
ADP-fossil resources	MJ	8.96E0	4.12E-1	2.36E-1	9.61E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	1.13E-2	2.31E-3	3.72E-2	-1.05E0
Water use ⁵⁾	m ³ e depr.	2.34E-1	1.31E-3	8.61E-3	2.44E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	5.04E-5	6.26E-5	2.41E-4	1.49E-3

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	1.37E-8	1.33E-9	1.06E-9	1.61E-8	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	8.64E-11	5.36E-11	2.69E-10	-2.86E-10
Ionizing radiation ⁶⁾	kBq U235e	7.66E-2	1.91E-3	5.85E-3	8.43E-2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	5.36E-5	3.23E-5	1.85E-4	-1.67E-3
Ecotoxicity (freshwater)	CTUe	3.95E0	2.77E-1	2.2E-1	4.45E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	1.01E-2	2.86E-2	7.99E-2	-2.37E-1
Human toxicity, cancer	CTUh	8.68E-10	1.82E-11	4.15E-11	9.28E-10	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	2.49E-13	7.03E-13	1.28E-12	-2.6E-11
Human tox. non-cancer	CTUh	2.87E-9	1.96E-10	1.64E-10	3.23E-9	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	1E-11	5.97E-12	3.42E-11	1.41E-10
SQP ⁷⁾	-	7.5E-1	1.17E-1	1.17E0	2.03E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	1.3E-2	1.72E-3	8.8E-2	-4.8E-2

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	1.27E0	3.10E-3	1.35E-1	1.41E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	1.27E-4	2.99E-4	7.76E-4	-2.98E-3
Renew. PER as material	MJ	3.70E-3	0E0	1.66E-1	1.70E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	-1.65E-1	-4.86E-3	0E0
Total use of renew. PER	MJ	1.28E0	3.10E-3	3.04E-1	1.58E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	1.27E-4	-1.65E-1	-4.08E-3	-2.98E-3
Non-re. PER as energy	MJ	9.22E0	4.09E-1	2.47E-1	9.88E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	1.13E-2	2.31E-3	3.72E-2	-1.08E0
Non-re. PER as material	MJ	5.01E0	0E0	-8.03E-2	4.93E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	-5.29E-2	-4.87E0	-4.62E-2
Total use of non-re. PER	MJ	1.42E1	4.09E-1	1.68E-1	1.48E+1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	1.13E-2	-5.06E-2	-4.83E0	-1.12E0
Secondary materials	kg	8.44E-4	1.78E-4	5.68E-3	6.70E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	3.13E-6	6.33E-6	1.31E-5	-5.71E-5
Renew. secondary fuels	MJ	1.13E-3	5.97E-7	3.62E-3	4.75E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	3.15E-8	3.75E-8	5.01E-7	-3.53E-8
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m ³	1.77E0	3.03E-5	5.52E-2	1.82E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	1.46E-6	1.64E-6	3.95E-5	-5.32E-2

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1.46E-2	6.06E-4	6.03E-4	1.58E-2	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	1.49E-5	2.62E-5	0E0	-4.93E-4
Non-hazardous waste	kg	4.36E-1	5.59E-3	1.85E-2	4.6E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	2.45E-4	4.95E-4	1.48E-1	1.35E-1
Radioactive waste	kg	2.16E-4	3.13E-6	1.37E-6	2.21E-4	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	7.53E-8	1.03E-8	0E0	-1.43E-7

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	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	9.74E-04	0E0	0E0
Materials for energy rec	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	1.06E-02	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0

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

Updated 26.10.2023

