



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

blaugelb Frame Extension and Coupling Systems
Meesenburg GmbH & Co. KG

EPD Registration number: HUB-4099
Published on 06.10.2025
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GENERAL INFORMATION

MANUFACTURER

Manufacturer	Meesenburg GmbH & Co. KG
Address	Westerallee 162, 24941 Flensburg, Germany
Contact details	shop@meesenburg.de
Website	blaugelb.de

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 1.2, 24 Mar 2025
Sector	Construction 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	Thomas Gruzelle, LCA Specialist for KRAHN Chemie
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
EPD verifier	Imane Uald Lamkaddam, as an authorized verifier acting for EPD Hub limited

This EPD is intended for business-to-business and/or business-to-consumer communication. 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.



PRODUCT

Product name	blaugelb Frame Extension and Coupling Systems
Additional labels	-
Product reference	blaugelb Kopplung PVC/TK, blaugelb Rahmenverbreiterung PVC/TK, blaugelb Rahmenverbreiterung PVC/TK Hebe- Schiebetür
Place(s) of raw materials origin	EU
Place of production	Bischofswerda, Germany
Place(s) of installation and use	Germany
Period for data	Jan-Dec 2024
Averaging in EPD	EPD of multiple products, based on the average results of the product group
Variation in GWP-fossil for A1-A3	-14/+27%
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	60%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m ² of panel
Declared unit mass	14.4 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	2.80E+01
GWP-total, A1-A3 (kgCO ₂ e)	2.48E+01
Secondary material, inputs (%)	14.7
Secondary material, outputs (%)	88.3
Total energy use, A1-A3 (kWh)	121
Net freshwater use, A1-A3 (m ³)	7.44

MANUFACTURER

ABOUT MEESENBURG

The Meesenburg Group is a leading building materials specialist and trusted service partner for the construction industry, with a strong focus on window and door solutions. With over 150,000 products, including fittings, fasteners, tools, sealants, and security systems from world-renowned brands, Meesenburg supports professionals across more than 10 countries.

We are committed to providing tailored product packages and expert services that meet the specific needs of our partners. Built on long-term relationships, Meesenburg employs over 1,000 people across 30 branches in Germany and internationally.



ABOUT BLAUGELB



For more than 20 years, blaugelb has been a trusted and established brand in the construction industry. Developed from tradition and driven by innovation, blaugelb stands for reliability, performance, and flexibility – offering high-quality solutions tailored to technical needs, pricing targets, and customer expectations.

Further information can be found at <https://www.meesenburg.com/>.

PRODUCT



PRODUCT DESCRIPTION

The blaugelb frame extension and coupling systems are made of high-performance PVC, designed to enhance both thermal and acoustic insulation around windows and doors. Two variants are available: a standard version and a version with an integrated heavy layer for improved sound attenuation. Both versions share the same panel dimensions and are available in multiple thicknesses and application types, including frame extension, lift-and-slide door extension, and coupling. The systems ensure airtight sealing, eliminate thermal bridges, and feature a durable, UV-resistant surface. The products have been tested according to relevant performance standards, including DIN 12087 (water absorption), DIN EN 513 (UV resistance), and ISO 105 A-03 (colour fastness), and are EMICODE EC1 Plus certified for very low emissions

Available thicknesses:

- *Standard version:* 70, 74, 76, 82, 88 mm
- *Heavy layer version:* 74, 76, 82, 88 mm

Panel dimensions:

- Heights: from 50 mm to 250 mm (in 25 mm increments)
- Length: 3000 mm

Environmental impacts are declared per square meter of product. The surface areas of the different panel configurations and related conversion factors used for scaling to 1 m² are provided in the annex.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	
Minerals	8.3	Filler (EU)
Fossil materials	90.5	Polymers (EU)
Bio-based materials	1.2	Part of adhesive (EU)

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	Not declared
Biogenic carbon content in packaging, kg C	Not declared

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m ² of panel
Mass per declared unit	14.4 kg
Functional unit	-
Reference service life	50 years

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	N/D	N/D	N/D	N/D	N/D	N/D	N/D	x	x	x	x	x	Recovery	Recycling
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse		

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The manufacturing process involves the assembly of the different panel components, including PVC profiles and the insulation material. A polyurethane-based adhesive is applied to bond the layers together, followed by a pressing and curing step to ensure strong adhesion and structural stability. Once cured, the panels are cut to the required dimensions according to their intended application. The finished products then undergo quality control before being packaged for distribution. The panels are stacked up to a total height of 1080 mm on a pallet. To prevent damage, cardboard sheets are placed between each panel, and the entire stack is securely wrapped in plastic film.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts associated with the delivery of final products to the construction site (A4) include direct exhaust emissions from fuel combustion, upstream emissions from fuel production, and emissions related to transport infrastructure. Since the panels are distributed nationally within Germany, the transport of 1 m² of product is modelled using 16-32 tons EURO 5 trucks over an average distance of 250 km. The handling and disposal of packaging materials related to transport are also included in the assessment.

PRODUCT USE AND MAINTENANCE (B1-B7)

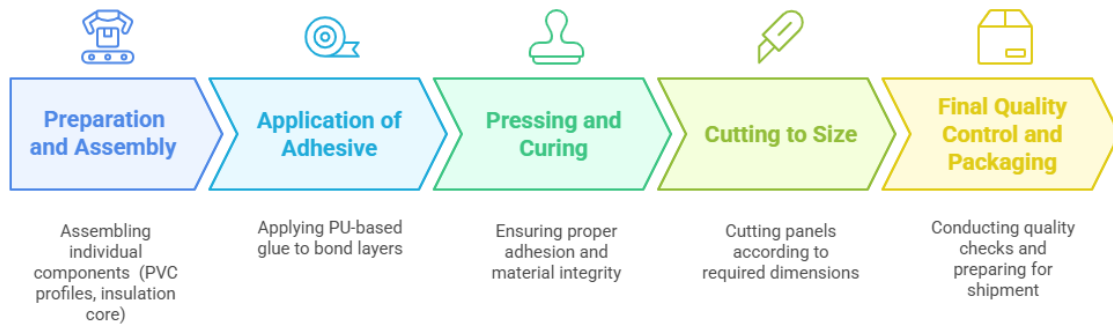
This EPD does not cover the use phase. These life cycle stages are dependent on how the product is used and should be developed and included as part of a holistic assessment of specific construction works

PRODUCT END OF LIFE (C1-C4, D)

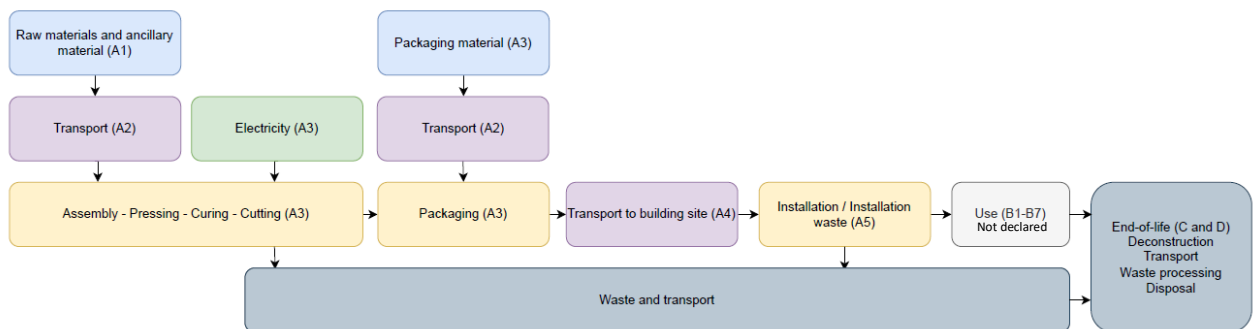
Due to the complexity of material separation and limited recycling options, the panels are dismantled and sent to a local incineration plant. A conservative scenario is applied, assuming complete incineration. Transport is modelled over an average distance of 50 km using >32-tons EURO 5 trucks. The incineration plant operates at an average efficiency of 38%, with energy recovery distributed as 16% electricity and 22% heat. The potential benefits from the incineration of the product and its packaging are accounted for in module D.

PROCESSES

MANUFACTURING



LIFE CYCLE DIAGRAM OF THE PRODUCT



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. Excluded processes include the construction of infrastructure (e.g., buildings, offices), capital goods, human labour, administrative operations, and employee transport. Minor ancillary materials (e.g., lubricating oils) and installation energy in A5 (e.g screw-guns energy) are also excluded as they fall below the cut-off threshold.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	Allocated by mass or volume
Ancillary materials	No allocation
Manufacturing energy and waste	Allocated by economic value among co-products, and by mass or volume within the product category

ESTIMATES AND ASSUMPTIONS

In modules A3, allocation was applied to the forming and pressing operations during panel manufacturing. The cutting stage was modelled based on the rated power and estimated operating time of the machinery. No production losses were assumed during cutting. Transport to the construction site (A4) was modelled over an average distance of 250 km using EURO 5 trucks (16-32 t), reflecting typical national distribution within Germany. No installation waste was assumed, except for packaging, which is modelled separately. End-of-life (C1-C4) includes dismantling and transport to the treatment facility over an average distance of 50 km (C2), consistent with typical distances between urban areas and waste treatment facilities in Germany. Due to the multilayer structure of the product and the lack of viable separation techniques for individual layers, incineration with energy recovery was selected as the end-of-life scenario.

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Weighted average based on the sales volume of each panel thickness
Variation in GWP-fossil for A1-A3	-14/+27%

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. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

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." under title environmental data

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF3.1

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 ₂ e	2,49E+01	2,06E+00	-2,22E+00	2,48E+01	7,92E-01	3,41E+00	ND	ND	ND	ND	ND	ND	ND	5,19E-02	7,75E-02	1,67E+01	0,00E+00	-1,05E+01
GWP – fossil	kg CO ₂ e	2,49E+01	2,06E+00	1,08E+00	2,80E+01	7,92E-01	9,16E-02	ND	ND	ND	ND	ND	ND	ND	5,18E-02	7,74E-02	1,67E+01	0,00E+00	-9,71E+00
GWP – biogenic	kg CO ₂ e	-9,10E-01	4,62E-04	-3,32E+00	-4,22E+00	1,57E-04	3,32E+00	ND	ND	ND	ND	ND	ND	ND	5,29E-06	1,75E-05	1,69E-03	0,00E+00	-7,56E-01
GWP – LULUC	kg CO ₂ e	9,49E-01	9,22E-04	1,77E-02	9,67E-01	2,80E-04	9,10E-05	ND	ND	ND	ND	ND	ND	ND	5,31E-06	3,46E-05	2,23E-05	0,00E+00	-1,54E-02
Ozone depletion pot.	kg CFC-11e	5,57E-06	3,04E-08	3,24E-08	5,63E-06	1,57E-08	1,05E-09	ND	ND	ND	ND	ND	ND	ND	7,94E-10	1,14E-09	-7,18E-09	0,00E+00	-1,16E-07
Acidification potential	mol H ⁺ e	8,90E-02	7,02E-03	4,36E-03	1,00E-01	2,48E-03	3,62E-04	ND	ND	ND	ND	ND	ND	ND	4,68E-04	2,64E-04	1,58E-03	0,00E+00	-6,23E-02
EP-freshwater ²⁾	kg Pe	8,71E-03	1,60E-04	3,63E-04	9,23E-03	5,25E-05	1,77E-05	ND	ND	ND	ND	ND	ND	ND	1,50E-06	6,03E-06	1,24E+03	0,00E+00	-6,20E-03
EP-marine	kg Ne	2,29E-02	2,31E-03	1,67E-03	2,69E-02	8,35E-04	4,15E-04	ND	ND	ND	ND	ND	ND	ND	2,17E-04	8,67E-05	3,19E-03	0,00E+00	-9,01E-03
EP-terrestrial	mol Ne	1,89E-01	2,51E-02	1,47E-02	2,29E-01	9,08E-03	1,43E-03	ND	ND	ND	ND	ND	ND	ND	2,38E-03	9,44E-04	3,43E-02	0,00E+00	-8,84E-02
POCP (“smog”) ³⁾	kg NMVOCe	7,86E-02	1,04E-02	5,63E-03	9,46E-02	3,88E-03	4,77E-04	ND	ND	ND	ND	ND	ND	ND	7,09E-04	3,89E-04	6,15E-03	0,00E+00	-2,84E-02
ADP-minerals & metals ⁴⁾	kg Sbe	1,93E-04	5,75E-06	4,73E-06	2,03E-04	2,59E-06	2,40E-07	ND	ND	ND	ND	ND	ND	ND	1,86E-08	2,16E-07	-9,03E-08	0,00E+00	-1,16E-05
ADP-fossil resources	MJ	5,92E+02	2,99E+01	1,80E+01	6,40E+02	1,11E+01	9,10E-01	ND	ND	ND	ND	ND	ND	ND	6,78E-01	1,12E+00	-1,27E+02	0,00E+00	-1,60E+02
Water use ⁵⁾	m ³ e depr.	1,21E+01	1,48E-01	5,29E-01	1,28E+01	5,46E-02	2,49E-02	ND	ND	ND	ND	ND	ND	ND	1,69E-03	5,55E-03	2,01E-01	0,00E+00	-3,14E+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, EF3.1

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	3,27E-07	2,06E-07	6,06E-08	5,94E-07	6,22E-08	6,17E-09	ND	ND	ND	ND	ND	ND	ND	1,33E-08	7,75E-09	-5,56E-08	0,00E+00	-5,02E-07
Ionizing radiation ⁶⁾	kBq 11235e	6,39E-01	2,60E-02	8,94E-02	7,54E-01	1,42E-02	2,86E-03	ND	ND	ND	ND	ND	ND	ND	3,00E-04	9,78E-04	-4,98E-02	0,00E+00	-3,14E+00
Ecotoxicity (freshwater)	CTUe	1,99E+02	4,23E+00	5,67E+00	2,09E+02	1,46E+00	7,01E-01	ND	ND	ND	ND	ND	ND	ND	3,73E-02	1,59E-01	8,23E+00	0,00E+00	-1,90E+01
Human toxicity, cancer	CTUh	1,03E-08	3,40E-10	2,77E-09	1,34E-08	1,35E-10	3,75E-11	ND	ND	ND	ND	ND	ND	ND	5,33E-12	1,28E-11	2,20E-06	0,00E+00	-1,93E-09
Human tox. non-cancer	CTUh	7,17E-07	1,94E-08	8,21E-09	7,45E-07	6,98E-09	2,02E-09	ND	ND	ND	ND	ND	ND	ND	8,44E-11	7,27E-10	2,21E-06	0,00E+00	-8,20E-08
SQP ⁷⁾	-	1,62E+02	3,01E+01	2,35E+02	4,28E+02	6,62E+00	8,27E-01	ND	ND	ND	ND	ND	ND	ND	4,75E-02	1,13E+00	7,72E-01	0,00E+00	-5,62E+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	4,64E+01	4,10E-01	1,85E+01	6,53E+01	1,92E-01	-2,95E+01	ND	ND	ND	ND	ND	ND	ND	4,30E-03	1,54E-02	-6,70E-01	0,00E+00	-2,90E+01
Renew. PER as material	MJ	1,08E+01	0,00E+00	2,89E+01	3,97E+01	0,00E+00	-2,89E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-1,08E+01	0,00E+00	6,48E+00
Total use of renew. PER	MJ	5,72E+01	4,10E-01	4,74E+01	1,05E+02	1,92E-01	-5,84E+01	ND	ND	ND	ND	ND	ND	ND	4,30E-03	1,54E-02	-1,15E+01	0,00E+00	-2,25E+01
Non-re. PER as energy	MJ	3,25E+02	2,99E+01	1,57E+01	3,71E+02	1,11E+01	1,49E-01	ND	ND	ND	ND	ND	ND	ND	6,78E-01	1,12E+00	-2,10E+02	0,00E+00	-1,60E+02
Non-re. PER as material	MJ	3,21E+02	0,00E+00	2,41E+00	3,24E+02	0,00E+00	-2,41E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-3,21E+02	0,00E+00	7,50E-01
Total use of non-re. PER	MJ	6,46E+02	2,99E+01	1,82E+01	6,94E+02	1,11E+01	-2,26E+00	ND	ND	ND	ND	ND	ND	ND	6,78E-01	1,12E+00	-5,31E+02	0,00E+00	-1,59E+02
Secondary materials	kg	2,11E+00	1,27E-02	4,55E-01	2,58E+00	5,09E-03	7,48E-04	ND	ND	ND	ND	ND	ND	ND	2,82E-04	4,78E-04	5,74E-03	0,00E+00	-8,34E-03
Renew. secondary fuels	MJ	9,81E-03	1,62E-04	8,50E-01	8,60E-01	6,43E-05	6,61E-06	ND	ND	ND	ND	ND	ND	ND	7,36E-07	6,07E-06	1,25E-04	0,00E+00	-3,58E-05
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	7,42E+00	4,42E-03	1,26E-02	7,44E+00	1,50E-03	-2,11E-03	ND	ND	ND	ND	ND	ND	ND	4,48E-05	1,66E-04	-1,62E-03	0,00E+00	-1,24E-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	6,79E-01	5,06E-02	5,71E-02	7,87E-01	1,59E-02	7,25E-03	ND	ND	ND	ND	ND	ND	ND	7,55E-04	1,90E-03	1,34E+00	0,00E+00	-7,17E-01
Non-hazardous waste	kg	2,68E+01	9,37E-01	1,78E+00	2,95E+01	3,37E-01	3,83E+00	ND	ND	ND	ND	ND	ND	ND	1,03E-02	3,52E-02	8,56E+00	0,00E+00	-3,06E+01
Radioactive waste	kg	2,31E-03	6,37E-06	3,06E-05	2,35E-03	3,52E-06	7,18E-07	ND	ND	ND	ND	ND	ND	ND	7,37E-08	2,40E-07	6,44E-07	0,00E+00	-8,06E-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	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	9,75E-01	0,00E+00	0,00E+00	9,75E-01	0,00E+00	8,28E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,27E+01	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,80E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,20E+02	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	1,18E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,06E+01	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	1,62E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	6,95E+01	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

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 ₂ e	2,58E+01	2,06E+00	1,10E+00	2,90E+01	7,92E-01	9,17E-02	ND	ND	ND	ND	ND	ND	ND	5,19E-02	7,74E-02	1,67E+01	0,00E+00	-9,73E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterization factors for the flows - CH₄ fossil, CH₄ biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO₂ is set to zero.

SCENARIO DOCUMENTATION

A3 - Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity, Germany, residual mix, 2023 (Association of Issuing Bodies) - Electricity from solar energy, photovoltaic (PV), Germany, EN15804+A2, ref. year 2021
Electricity CO ₂ e / kWh	0.72 kg CO ₂ e / kWh (mix) - 0.07 kg CO ₂ e / kWh (solar)
District heating data source and quality	Heat production, natural gas, at industrial furnace >100kW (Reference product: heat, district or industrial, natural gas)
District heating CO ₂ e / MJ	0.08 kg CO ₂ e / MJ

A4 - Transport scenario documentation

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	Diesel: freight, lorry 16-32 metric ton, (EURO5)
Average transport distance, km	250
Capacity utilization (including empty return) %	36.7%
Bulk density of transported products	177 kg/m ³
Volume capacity utilization factor	0.35

A5 - Installation scenario documentation

Scenario information	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate (Installation accessories are considered being part of the product)	0
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	0
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	1.6 kg wood / 0.37 kg cardboard / 0.019 kg plastic
Output materials (specified by type) as result of waste processing at the building site	wood: 32% recycled, 30% incinerated, 38% landfilled cardboard: 83% recycled, 8% incinerated, 9% landfilled plastic: 40% recycled, 37% incinerated, 23% landfilled
Direct emissions to ambient air, soil and water / kg	0

End-of-life documentation

Scenario information	Value
Collection process – kg collected separately)	14.4 kg
Collection process – kg collected with mixed waste	-
Recovery process – kg for re-use	-
Recovery process – kg for recycling	-
Recovery process – kg for energy recovery	14.4 kg
Disposal (total) – kg for final deposition	-
Scenario assumptions e.g. transportation	50 km

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.

Imane Uald Lamkaddam as an authorized verifier for EPD Hub Limited 06.10.2025



ANNEX: CONVERSION FACTORS

The LCA previous LCA results are expressed per 1 m² as the declared unit for the assessed panels. The panel dimensions, applicable to both versions (with and without heavy layer), are as follows:

- Standard net heights: 50, 75, 100, 125, 150, 175, 200, 225, 250 mm
- Length: 3000 mm

For the product types [blaugelb Kopplung PVC/TK](#), [blaugelb Rahmenverbreiterung PVC/TK](#), and [blaugelb Rahmenverbreiterung PVC/TK Hebe-Schiebetür](#), the environmental impacts per unit should be calculated by multiplying the impact results per m² (as presented in the previous table) by the actual surface area of the specific panel variant. The corresponding surface areas used for conversion are listed below:

Height (mm)	Length (mm)	Surface area factor (m ²)
50	3000	0.15
75	3000	0.225
100	3000	0.3
125	3000	0.375
150	3000	0.45
175	3000	0.525
200	3000	0.6
225	3000	0.675
250	3000	0.75