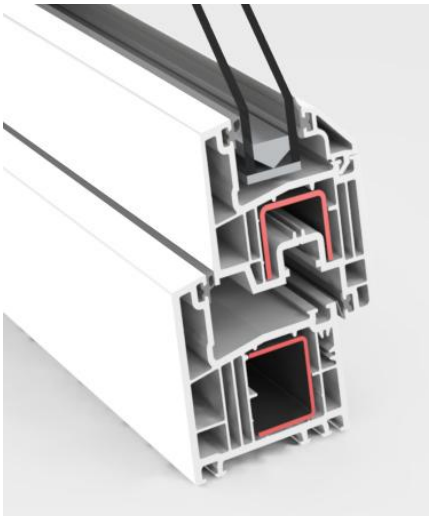
LB PROFILE BH d.o.o.

LB.Profile

ENVIRONMENTAL PRODUCT DECLARATION



PRODUCT NAME

Rigid extruded PVC profiles for window and door systems

PRODUCTION SITE

Nikole Tesle 71, 74000 Doboj,
Bosnia and Herzegovina

In accordance with ISO 14025 and EN 15804:2012+A2:2019

Program Operator	EPDItaly
Publisher	EPDItaly

Declaration number	EPD032_2026_rev1.0
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GENERAL INFORMATION

EPD OWNER

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PROGRAM OPERATOR

EPDItaly	Via Gaetano De Castillia n° 10 - 20124 Milano, Italy

EPD INFORMATION

Product name	Rigid extruded PVC profiles for window and door systems
Production site	Nikole Tesle 71. 74000 Doboj
Brief description and technical information of the products	Rigid PVC profiles obtained by extrusion of a white PVC dry blend, belonging to the PCD70 profile system. The range covers the functional profile types of a window/door system: glazing beads, frames, mullions, stulps, casements, sashes and door-leaf profiles. Common gloss level 40±5 at 60°. The profiles are produced from two alternative compound formulations (DB WEISS Tip 1 and DB WEISS Tip 2).
CPC code https://unstats.un.org/unsd/classifications/Econ	363 – Semi-manufactures of plastics
Generation of the EPD	EPD developed by Ollum Srl
Type of EPD	Product-specific EPD
Product application area	Intermediate construction products (semi-finished PVC profiles) for the manufacture of windows and doors. Intended for professional and industrial use (B2B). Geographical scope: Production – Bosnia and Herzegovina; Use and end-of-life – Europe.

VERIFICATION INFORMATION

PCR	Core PCR: PCR per i PRODOTTI e SERVIZI da costruzione: ICMQ 001, Rev. 4 + Technical Guideline for CORE PCR ICMQ 001
EPDItaly Regulation	Regulations of the EPDItaly Programme Revision 7.1.
Project Report LCA	LCA_Report_LB_Profile_BH_EN_v0.2
LCA practitioners	Chiara Benvenuto chiara.benvenuto@ollum.it, Alessio Zapparoli alessio.zapparoli@ollum.it; Ollum S.r.l. Via Ardengo Soffici 151, 52100, Arezzo, info@ollum.it

Independent verification/validation statement	The review of the PCR was conducted by ICMQ S.p.A. – info@epditaly.it. Independent verification of the declaration and data carried out in accordance with ISO 14025:2010. ☐ Internal ☑ External Third-party verification carried out by: ICMQ S.p.A., via Gaetano De Castillia n° 10 - 20124 Milan, Italy. Accredited by Accredia
Statement Comparability	Environmental claims published within the same product category, but from different programs, may not be comparable.
Statement Responsibility	The EPD Owner relieves EPDItaly from any non-compliance with environmental legislation. The holder of the statement will be responsible for the information and supporting evidence. EPDItaly declines all responsibility for the information, data and results provided by the EPD Owner for the life cycle assessment.

1. THE COMPANY

LB Profile BH d.o.o. is a manufacturer of PVC profile systems for windows and doors, headquartered in Bosnia and Herzegovina with a commercial office in Germany. Founded in Germany in 1960, the company has over 60 years of experience in PVC profile extrusion and today employs approximately 135 engineers and production workers, serving more than 44 distributors across the European Union.

The company's core activity is the extrusion of high-quality PVC profiles for the production of finished windows and doors. LB Profile BH d.o.o. operates the PCD70 profile system, which covers a complete range of frames, sashes, mullions, glazing beads, stulps and door-leaf profiles. All operational activities relevant to the LCA study – material handling, energy consumption, extrusion and waste management – are carried out at the production facility in Doboj, Bosnia and Herzegovina. The administrative head office in Tešanj performs coordination and management functions only.

The company holds ISO 9001:2015 (Quality Management) and ISO 14001:2015 (Environmental Management) certifications. Its products and systems are further certified through IFT Rosenheim test reports and the SKG-IKOB certification scheme (BRL 0702 and BRL 0703).

Main products include rigid PVC profiles of the PCD70 system: frames, sashes, mullions, glazing beads, stulps and door-leaf profiles for windows and doors.

Key application sectors include the manufacture of PVC windows and doors for residential, commercial and infrastructure building applications.

2. THE PRODUCT

This EPD is issued for rigid extruded PVC profiles for window and door systems manufactured by LB Profile BH d.o.o. The declaration covers 18 specific profile codes belonging to the PCD70 profile system: AG 3, AG 4, AG 5, AG 9, AG 11, CG 8, CL 2-25, CLM 2-25, CLMR 2-25, CS 7, CT 2-4, CTM 2-4, CT 27-5, CT 28-4, CZ 2-5, CZ 2-20, CZ 7-5 and CZ 8-4. The products can be manufactured using two alternative white rigid PVC compound formulations, namely DB WEISS Tip 1 and DB WEISS Tip 2. These formulations do not represent separate product codes, but two material configurations applicable to the declared product range. Accordingly, two separate sets of environmental performance indicators are reported in this EPD.

The 18 profile codes are classified according to their functional role within the PCD70 window and door system. Each functional category corresponds to a specific structural position and performance requirement in the assembled window or door unit:

- *Glazing bead profiles* (AG 3, AG 4, AG 5, AG 9, AG 11, CG 8) retain the glazing unit within the sash or frame rebate;
- *Frame profiles* (CL 2-25, CLM 2-25, CLMR 2-25) are the fixed component anchored to the building opening, onto which the operable sash is hinged. The three codes identify constructive variants of the same functional element, distinguished by their sealing and reinforcement configuration: CL 2-25 is the base frame profile, without a central sealing gasket; CLM 2-25 integrates a central gasket between frame and sash, improving thermal and acoustic performance; CLMR 2-25 is the reinforced version of the gasketed frame, consistent with its higher linear mass;
- *Stulp profiles* (CS 7) are the mullion-type component used in double-leaf window and door systems without a central post, onto which the meeting stiles of the two sashes close;
- *Mullion profiles* (CT 2-4, CTM 2-4) subdivide the window or door opening into multiple modules, providing structural support between adjacent frame or sash units;
- *Sash profiles* (CZ 2-5) are the operable component hinged to the frame, onto which the glazing unit is mounted;

- *Casement profiles* (CZ 2-20) are the operable, openable component of window systems, hinged to the frame;
- *Balcony door sash profiles* (CT 27-5, CZ 7-5) are the operable component of balcony door systems, dimensioned for door-scale openings and mechanical use;
- *Door leaf profiles* (CT 28-4, CZ 8-4) are the operable component of door systems, dimensioned for higher mechanical loads than window sashes.

The main dimensional characteristics and the linear mass of each profile variant are reported. The linear mass represents the mass of one linear metre of the corresponding extruded profile and therefore provides the physical relationship between the mass-based declared unit and the individual profile configurations included within the scope of this EPD.

Some of the declared profile codes include internally regranulated PVC as part of their material configuration. The internal regranulate is generated and reused within the same production system and is applied only to selected profiles, namely CL 2-25, CLM 2-20 and CZ 2-20. The corresponding material configuration is reported in the composition section of the EPD.

Product	Type	PVC profile weight (g/m)
AG 3	Glazing bead	165
AG 4	Glazing bead	170
AG 5	Glazing bead	180
AG 9	Glazing bead	210
AG 11	Glazing bead	130
CG 8	Glazing bead	205
CL 2-25	Frame	1,280
CLM 2-25	Frame	1,280
CLMR 2-25	Frame	1,650
CS 7	Stulp	1,400
CT 2-4	Mullion	1,610
CT 27-5	Balcony door sash	1,885
CT 28-4	Door leaf	2,060
CTM 2-4	Mullion	1,680
CZ 2-5	Sash	1,480
CZ 2-20	Casement	1,240
CZ 7-5	Balcony door sash	1,850
CZ 8-4	Door leaf	2,130

Although the individual profiles differ in geometry, function within the assembled window/door system and linear mass, these differences do not affect the general production principle or the final field of application. They are declared on a common mass basis. Where present, the gasket is a co-extruded PVC gasket. All profiles share a common gloss level of 40±5 at 60°.

The profiles are produced from a white rigid PVC dry blend of the PCD70 system, available in two alternative compound formulations (DB WEISS Tip 1 and DB WEISS Tip 2) applicable to all profile types. The two recipes differ only in the composition of the PVC compound and do not affect the role of the profiles within the window/door system.

Although the listed profiles differ in geometry, function within the PCD70 system and linear mass, they are manufactured through the same production process and from the same compound recipes (DB WEISS Tip 1 and Tip 2) and are subject to the same plant-level allocation methodology. On this basis, the environmental performance results reported in this EPD for DB WEISS Tip 1 and Tip 2 are considered

representative of all the profile codes listed above; the set of declared environmental indicators does not vary in a way that would require product-specific results.

2.1. COMPOSITION

The following tables report the material composition of the two PVC compound formulations declared in this EPD, namely DB WEISS Tip 1 and DB WEISS Tip 2. These formulations represent the virgin white rigid PVC compounds that can be used for the production of the declared profile codes.

For selected profile codes, the final profile configuration also includes a share of internally regranulated PVC. The internal regranulate is generated and reused within the same production system and is reintroduced into the production process for specific profile configurations. In these cases, the remaining share of the profile is made of virgin white rigid PVC compound, which can correspond either to DB WEISS Tip 1 or to DB WEISS Tip 2, depending on the formulation used in production.

The profile codes manufactured with internally regranulated PVC and the corresponding material configuration are reported in the following table.

DB WEISS Tip 1

Product content	Mass, kg	Mass-% (of total incl. packaging)	Post-consumer recycled material, mass-% of product
S-PVC	0.76	62.4%	0.00
Impact modifier	0.06	4.6%	0.00
Calcium-zinc stabilizer/lubricant	0.06	5.2%	0.00
Calcium carbonate	0.11	9.1%	0.00
Titanium dioxide	0.002	0.3%	0.00
Packaging (wood, cardboard, PE, steel)	0.22	18.4%	0.00
TOTAL	1.22	100.0%	0.00

Biogenic material in the product, kg C/product or declared unit	Biogenic material in the packaging, kg C/product or declared unit
0.001	0.088

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO2.

DB WEISS Tip 2

Product content	Mass, kg	Mass-% (of total incl. packaging)	Post-consumer recycled material, mass-% of product
S-PVC	0.77	62.7%	0.00

Impact modifier	0.06	4.6%	0.00
Calcium-zinc stabilizer/lubricant	0.06	5.3%	0.00
Calcium carbonate	0.12	9.2%	0.00
Packaging (wood, cardboard, PE, steel)	0.22	18.2%	0.00
TOTAL	1.22	100.0%	0.00

Biogenic material in the product, kg C/product or declared unit	Biogenic material in the packaging, kg C/product or declared unit
0.001	0.088

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO2.

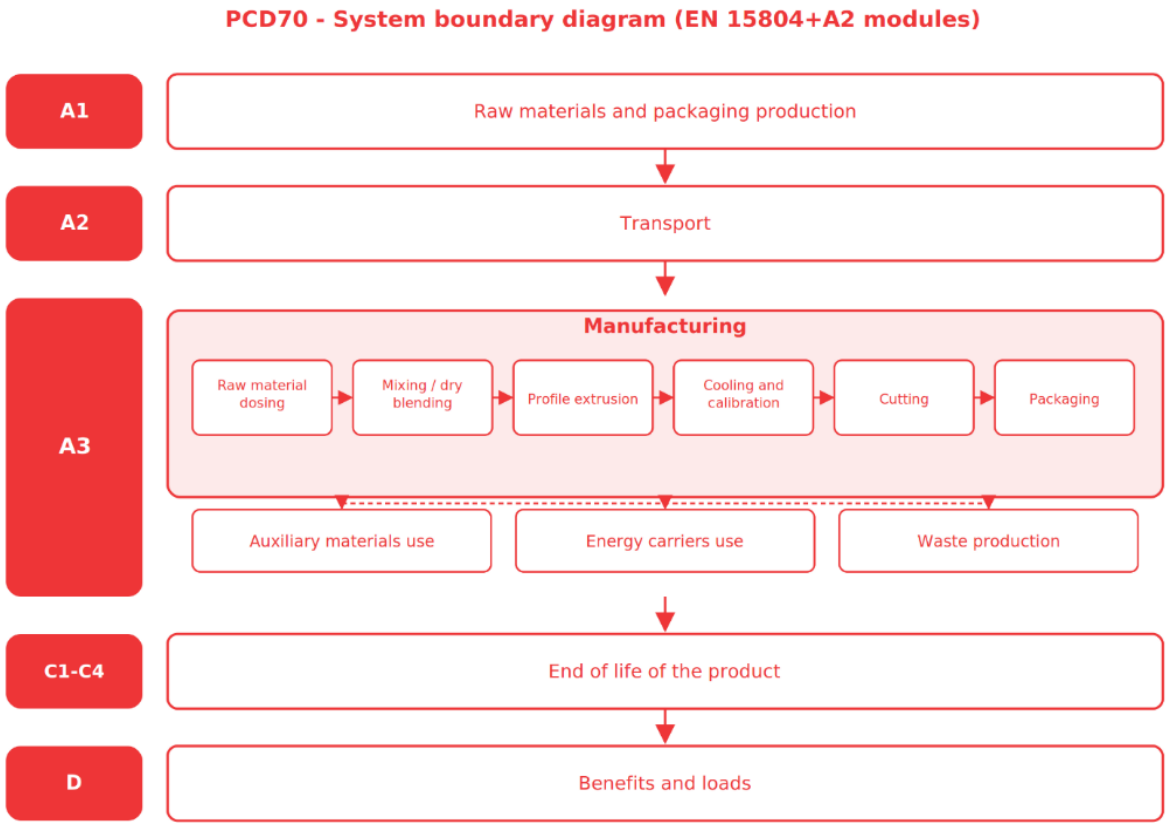
Material configuration of profile codes containing internally regranulated PVC

Product code	Virgin white rigid PVC compound	Internally regranulated PVC
CL 2-25	30%	70%
CZ 2-20	60%	40%
CLM 2-25	30%	70%

2.2. THE PRODUCTION PROCESS

The production process of the rigid PVC profiles manufactured by LB Profile BH d.o.o. consists of extrusion of a PVC dry blend specifically formulated for window and door profiles.

At the manufacturing site the raw materials are dosed according to the relevant formulation and mixed to obtain a homogeneous dry blend suitable for extrusion. The compound is processed through extrusion lines, where it is heated, plasticised and shaped through profile-specific dies, defining the geometry of each product type (glazing beads, frames, mullions, stulps, casements and door-leaf profiles). After extrusion the profiles are cooled and calibrated to maintain dimensional stability, then cut to the required lengths and subjected to visual and dimensional quality control. The final steps include internal handling and packaging of the finished profiles for storage and shipment.



2.3. REFERENCE SERVICE LIFE (RSL)

Not Applicable – The reference service life of these products is usually not dependent on the properties of the products themselves, but rather on the service life of the building or building part in which they are included. The profiles are semi-finished components of window and door systems and do not have an independent service life.

3. SCOPE AND TYPE OF EPD

This is a product-specific Environmental Product Declaration (EPD), developed in compliance with ISO 14025 and EN 15804:2012+A2, within the EPDItaly programme. The study is based on a life cycle assessment (LCA) methodology in accordance with ISO 14040 and ISO 14044 standards, covering the range of 18 rigid PVC profiles of the PCD70 system and ISO 21930:2017.

The present study is developed as a "cradle to gate with options" EPD. The system boundaries include the mandatory modules A1–A3 (product stage) then C1–C4 (end-of-life stage) and module D (benefits and loads beyond the system boundary). The optional modules A4 and A5, as well as the use-phase modules B1–B7, are not declared. Being a product-specific EPD, the declared results are reported separately for the two PVC compound configurations, DB WEISS Tip 1 and DB WEISS Tip 2, which are applicable to the 18 rigid PVC profiles included in the scope of the declaration.

The reference year is set at 2025. The results were generated using SimaPro 10.4modelling software, using the Ecoinvent 3.11 database, the impact assessment method complies with EN 15804+A2 using the EF 3.1 (JRC) characterisation factors.

Representativeness	Scope
Geographical - Production	Bosnia and Herzegovina
Geographical - Use and End-of-life	Europe
Year	2025

The geographical data reported above (Bosnia and Herzegovina) refers to the manufacturing. The use area and the end-of-life area are both Europe, consistent with the intended market of the products and with the European background data and scenarios adopted to model the end-of-life stage.

3.1. DECLARED UNIT

The declared unit is 1 kilogram of extruded PVC profile of the PCD70 system, used as a component of window and door systems. As all products belong to the same rigid-PVC family and are declared on a mass basis, the declared unit corresponds to 1 kg for every profile in the range, no mass-to-unit conversion factor is required.

3.2. DATABASE AND LCA SOFTWARE USED

Ecoinvent 3.11 – allocation, cut-off by classification – Unit, SimaPro 10.4.

PRINCIPLE OF MODULARITY AND ENVIRONMENTAL RESPONSIBILITY (PPP)

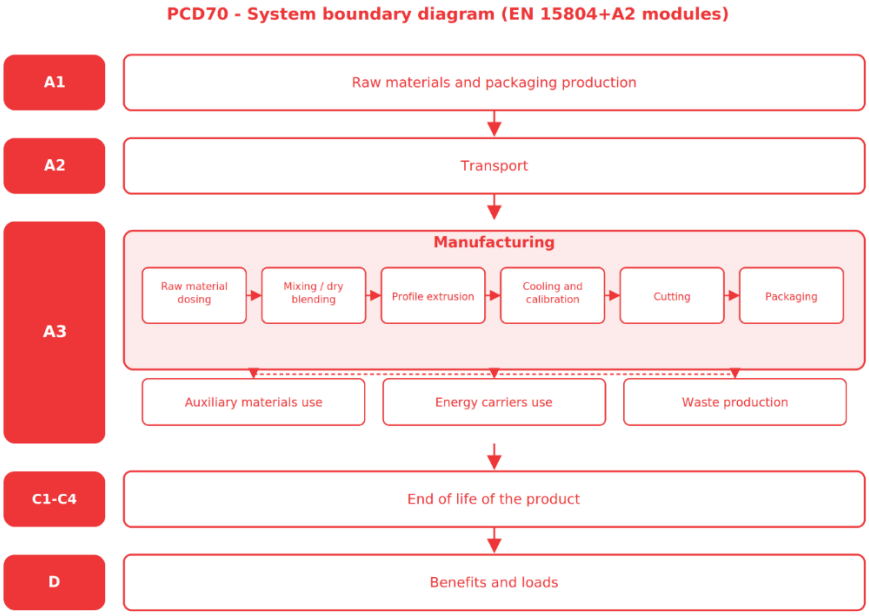
In the LCA study, the principle of modularity was adopted, which allows the product life cycle to be broken down into different phases, assigning specific environmental impacts to each of them. This approach facilitates a clear attribution of environmental responsibilities at every stage of the production process, ensuring greater transparency and traceability of data.

In addition, the PPP (Polluter Pays Principle) has been complied with, according to which the entity causing an environmental impact is also the one responsible for the related mitigation or repair costs. This principle ensures that environmental costs are not passed on to the community, but are correctly attributed to those

who generated them, promoting greater responsibility and incentivizing the adoption of more sustainable practices throughout the supply chain.

3.3. SYSTEM BOUNDARIES

The system boundary implemented in this LCA follows a "cradle to gate with options" approach, in accordance with EN 15804:2012+A2. The life cycle stages included in the study are the product stage (A1–A3), the end-of-life stage (C1–C4) and Module D (benefits and loads beyond the system boundary), as required by the reference PCR.



	Product stage			Construction process stage		Use							End of life				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction/Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/Demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling potential
MODULE	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Module declared	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

- **The product stage (A1-A3, "cradle to gate") includes:**

Raw material supply (A1): production of the main constituent substances of the PVC compound, namely suspension PVC, impact modifier, calcium-zinc stabilizer/lubricant complex, calcium carbonate and, for DB WEISS Tip 1, titanium dioxide. The module also includes the production of packaging materials associated with the raw-material supply, where relevant. The two compound formulations considered in the study are DB WEISS Tip 1 and DB WEISS Tip 2, both normalised to 1 kg of finished extruded PVC profile.

Transport of raw materials to the manufacturing site (A2): transport of incoming raw materials, related packaging materials, finished product packaging materials and auxiliary materials to the LB Profile BH d.o.o. production site. Transport distances were calculated on the basis of supplier locations and modelled as road transport using a lorry dataset. The transported quantities were calculated in tonne-kilometres, considering the mass of each material and the associated packaging, where applicable.

Manufacturing (A3): production activities carried out at the manufacturing site, including raw material dosing, dry blending, extrusion, cooling and calibration, cutting, quality control, internal handling and packaging of the finished profiles. The module also includes electricity consumption, diesel consumption, water consumption, auxiliary materials, finished product packaging, process waste generation and related waste treatment and transport and emissions to air. Plant-level flows were allocated on a mass basis using the total annual production volume for 2025. Electricity consumption was modelled using the Bosnian residual electricity mix dataset, with a specific consumption of 1.22 kWh per kg of finished product.

- **The end-of-life stage (C1–C4) includes:**

Deconstruction/dismantling (C1): removal of the PVC profiles from the building or from the window/door system at end of life. This module was modelled using the default PCR scenario for demolition/deconstruction activities, considering diesel consumption for machinery. For plastic materials, an energy requirement of 1.1 kWh/t was applied.

Transport at end of life (C2): transport of post-consumer PVC profile waste from the dismantling site to waste treatment or disposal facilities. Default PCR transport distances were applied according to the waste destination: 80 km for non-incinerated materials and 130 km for waste sent to incineration.

Waste processing (C3): treatment of PVC profile waste before recovery, recycling or disposal. The end-of-life scenario was based on Eurostat waste management statistics for plastic waste. A recovery scenario including 75.04% recycling and 19.98% energy recovery was considered.

Disposal (C4): final disposal of the non-recoverable fraction of PVC profile waste. Based on the adopted plastic waste scenario, 4.82% of the waste was assumed to be sent to landfill and 0.16% to incineration without energy recovery.

- **Module D** reports the potential benefits and loads beyond the system boundary. A recycling share of 75.04% was considered for the PVC waste, with a 90% recycling-chain yield. Recycled PVC is assumed to substitute virgin suspension PVC, and the recycling treatment is included as a load, in accordance with EN 15804+A2.

- **The other stages not included:**

The construction process stage (A4–A5) is not declared. The analysed profiles are intermediate construction products supplied to professional customers and window/door manufacturers. Their downstream transport and installation depend on the final window or door system and on project-specific conditions; therefore, modules A4 and A5 are not included within the system boundary.

The use stage (B1–B7) is not declared in this study. The products are rigid PVC profiles intended to be incorporated into window and door systems. No operational energy or water consumption is directly attributable to the profiles themselves during use. Their performance and service life depend on the assembled window or door system, installation conditions, exposure and maintenance practices.

3.4. CUT-OFF RULES

In accordance with the reference PCR (ICMQ 001, Rev. 4), Life Cycle Inventory (LCI) data shall cover at least 95% of the total mass and energy flows for each process (e.g. upstream processes). Similarly, at least 95% of the potential environmental impact for each process shall be included.

In this study, no cut-off rules have been applied to production, waste management, auxiliary materials or any other life-cycle stages, as all flows are considered relevant to the overall environmental impact and complete data are available.

3.5. ASSUMPTIONS

A single finished-product packaging configuration was applied to all 18 products included in the study. This configuration was selected as a conservative worst-case scenario, as it corresponds to the lowest quantity of PVC profiles transported per pallet, equal to 162.24 kg. Therefore, the same packaging quantity was allocated to 1 kg of product for all analysed profiles.

Since gross input data including technological extrusion scrap were not available, an average process scrap factor was estimated by dividing the total annual quantity of PVC process scrap sent to internal regranulation by the total annual production of PVC profiles. Based on this calculation, a scrap factor of 17.61% was applied to the raw material inputs of the PVC compound formulations and to the related incoming raw-material packaging and transport flows, where proportional to the quantity of raw materials supplied.

The internally regranulated PVC is generated and reused within the same production system and is applied only to selected profile codes. Since the environmental modelling of the virgin share is based on the two declared PVC compound formulations, DB WEISS Tip 1 and DB WEISS Tip 2, and the regranulate is treated as an internal material flow, no additional environmental dataset was defined for the profiles containing internal regranulate. Therefore, the environmental results are reported through the two datasets corresponding to the two compound formulations.

3.6. EXCLUSION CRITERIA

As defined by the reference PCR, which refers to the EN 15804 standard, the following parameters may be excluded from the study if they are not directly attributable to the production of the reference products:

- capital goods such as buildings, machinery, tools, and infrastructure;
- packaging for internal transport, such as boxes and containers used to move parts and components internally for assembly purposes;
- administrative activities such as business travel, marketing, and advertising.

3.7. ALLOCATION RULES

In this study, allocation has been applied exclusively to the manufacturing phase, and only for flows that could not be directly attributed to the declared unit of 1 kg of extruded PVC profile. Because specific consumption and waste data were not available separately for each product, plant-level flows (auxiliary materials, energy carriers, electricity consumption, diesel, water and waste generation) were allocated on a mass basis using the total annual production volume of the plant for the reference year 2025.

For raw materials, incoming/finished-product packaging and end-of-life flows, direct attribution was applied on the basis of the bill of materials and the material composition, without resorting to mass-based allocation.

3.8. DATA QUALITY

The data used in the LCA study include both primary, secondary and proxy data. The primary data were obtained directly from LB Profile BH d.o.o. and are under the control and management of the company (bills, invoices, transport documents, weighing records) for the reference year 2025. Secondary data come mainly from the Ecoinvent v3.11 database. Proxy data come from sources other than databases, used to create scenarios and fill information gaps.

The data quality assessment was conducted in accordance with EN 15804:2012+A2:2019, Annex E, Table E.1, which defines the criteria for evaluating the temporal, geographical and technological representativeness of the datasets used. The table below presents the type of data for every module included.

LCA Module	Type of data	Temporal representativeness	Geographical representativeness	Technological representativeness
Production stage (A1-A3)	Primary data	Good	Good	Very Good
Distribution Stage (A4)	MND	MND	MND	MND
Installation Stage (A5)	MND	MND	MND	MND
Use & Maintenance Stage (B)	MND	MND	MND	MND
End of Life Stage (C1-C4)	Generic data for transport to treatment	Good	Good	Good
	Specific data for EoL and disposal scenarios	Good	Good	Good
Resource recovery stage (D)	Generic data for avoided products	Good	Good	Good

Product	Weighted DQR
DB WEISS Tip 1	2.33
DB WEISS Tip 2	2.33

Overall quality: **Good**

The overall data quality rating, computed as DQR = (TeR + GeR + TiR) / 3, is 2.33 for both compound formulations, corresponding to "good quality".

4. RESULTS

In this section, the results of the LCA study are presented, broken down by environmental impact indicator and by the life cycle modules declared in the study. The environmental impacts were calculated using the EN 15804+A2 impact assessment method, together with the complementary methods required for the calculation of resource use, waste categories and output flow indicators, as described in the SimaPro Methods library and in accordance with the Core PCR ICMQ 001, Rev. 4.

The results are reported separately for the two declared PVC compound configurations, DB WEISS Tip 1 and DB WEISS Tip 2. These configurations represent the alternative material formulations applicable to the range of 18 rigid extruded PVC profiles included in the scope of the EPD. The results are expressed with reference to the declared unit of 1 kg of extruded PVC profile.

DB WEISS Tip 1

Environmental impact indicators

Impact indicators	Abbr.	Unit	A1	A2	A3	C1	C2	C3	C4	D
Climate change total	GWP-Total	kg CO2 eq.	2.90E+00	1.57E-01	1.45E-01	3.98E-04	1.72E-02	6.07E-01	3.61E-03	-1.25E+00
Climate change - Fossil	GWP-Fossil	kg CO2 eq.	2.91E+00	1.57E-01	9.65E-02	3.98E-04	1.71E-02	5.99E-01	3.33E-03	-1.24E+00
Climate change - Biogenic	GWP-Biogenic	kg CO2 eq.	-1.94E-02	1.07E-04	4.83E-02	1.06E-07	1.18E-05	7.28E-03	2.72E-04	-1.22E-02
Climate change - Land use and LU change	GWP-Luluc	kg CO2 eq.	1.75E-03	5.19E-05	3.61E-04	3.32E-08	5.67E-06	3.18E-04	1.16E-07	-9.06E-04
Ozone depletion	ODP	kg CFC-11 eq.	1.26E-06	3.42E-09	2.47E-08	8.55E-12	3.74E-10	4.03E-09	1.50E-11	-9.37E-07
Acidification	AP	mol H+ eq.	1.56E-02	5.03E-04	4.36E-04	3.56E-06	5.50E-05	9.47E-04	3.37E-06	-4.10E-03
Eutrophication, freshwater	EP - freshwater	kg P eq.	1.17E-03	1.07E-05	2.30E-05	1.22E-08	1.17E-06	1.04E-04	4.57E-08	-4.10E-04
Eutrophication, marine	EP - marine	kg N eq.	2.63E-03	1.69E-04	1.72E-04	1.66E-06	1.85E-05	2.54E-04	1.87E-05	-8.42E-04
Eutrophication, terrestrial	EP-terrestrial	mol N eq.	2.60E-02	1.84E-03	1.54E-03	1.81E-05	2.01E-04	2.13E-03	1.50E-05	-8.18E-03

Photochemical ozone formation	POCP	kg NMVOC eq.	1.12E-02	7.63E-04	6.85E-04	5.46E-06	8.34E-05	6.90E-04	6.08E-06	-4.87E-03
Resource use, minerals and metals**	ADPE	kg Sb eq.	2.50E-05	5.28E-07	3.39E-07	1.37E-10	5.78E-08	1.57E-06	1.03E-09	-1.53E-05
Resource use, fossils**	ADPF	MJ, net calorific value	5.77E+01	2.22E+00	1.60E+00	5.17E-03	2.43E-01	3.00E+00	1.15E-02	-3.14E+01
Water use**	WDP	m3 world eq. deprived	1.67E+00	8.62E-03	2.87E-02	8.92E-06	9.43E-04	3.65E-01	-2.48E-04	-1.12E+00

*Disclaimer 1 - 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.

**Disclaimer 2 – The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

Additional environmental impact indicators

Impact indicators	Abbr.	Unit	A1	A2	A3	C1	C2	C3	C4	D
Particulate matter emissions	PM	Disease incidence	6.42E-08	1.25E-08	1.03E-08	1.01E-10	1.37E-09	7.58E-09	7.90E-11	-2.64E-08
Ionizing radiation, human health*	IRP	kBq U235 eq.	2.68E-01	2.65E-03	7.86E-03	2.59E-06	2.90E-04	5.79E-02	1.81E-05	-1.40E-01
Eco-toxicity - freshwater**	ETP-fw	CTUe	1.33E+01	2.94E-01	3.83E-01	2.46E-04	3.22E-02	2.28E+01	3.02E-01	-7.13E+00
Human toxicity, cancer effect **	HTP-c	CTUh	3.46E-09	2.66E-11	2.30E-10	4.01E-14	2.91E-12	1.81E-10	1.53E-13	-2.39E-09
Human toxicity, non-cancer effects **	HTP-nc	CTUh	2.62E-08	1.38E-09	9.04E-10	6.33E-13	1.51E-10	3.76E-09	1.04E-11	-1.24E-08
Land use related impacts/Soil quality **	SQP	dimensionless	1.04E+01	1.31E+00	2.99E+01	3.07E-04	1.44E-01	1.04E+00	2.74E-02	-3.17E+00

Use of resources

Impact indicators	Abbr.	Unit	A1	A2	A3	C1	C2	C3	C4	D
Renewable primary energy as energy carrier	PERE	MJ, net calorific value	4.92E+00	3.51E-02	1.82E+00	3.41E-05	3.84E-03	5.88E-01	2.90E-04	-1.34E+00
Renewable primary energy resource as material utilization	PERM	MJ, net calorific value	3.87E-01	0.00E+00	3.07E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources	PERT	MJ, net calorific value	5.31E+00	3.51E-02	4.89E+00	3.41E-05	3.84E-03	5.88E-01	2.90E-04	-1.34E+00

Non-renewable primary energy as energy carrier	PENRE	MJ, net calorific value	3.65E+01	2.22E+00	1.39E+00	5.17E-03	2.43E-01	3.00E+00	1.15E-02	-3.14E+01
Non-renewable primary energy as material utilization	PENRM	MJ, net calorific value	2.12E+01	0.00E+00	2.07E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources	PENRT	MJ, net calorific value	5.77E+01	2.22E+00	1.60E+00	5.17E-03	2.43E-01	3.00E+00	1.15E-02	-3.14E+01
Use of secondary material	SM	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
Use of renewable secondary fuels	RSF	MJ, net calorific value	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 non-renewable secondary fuels	NRSF	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	FW	m3	4.88E-02	2.77E-04	8.11E-04	2.90E-07	3.03E-05	1.37E-02	-2.17E-04	-2.82E-02

Waste categories

Impact indicators	**Abbr.**	**Unit**	**A1**	**A2**	**A3**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	HWD	kg	2.57E-03	5.61E-05	2.86E-04	4.73E-08	6.13E-06	4.82E-02	7.43E-05	3.72E-02
Non-hazardous waste disposed	NHWD	kg	1.92E-01	1.06E-01	1.88E-02	3.43E-06	1.16E-02	1.15E-01	4.83E-02	-4.92E-02
Radioactive waste disposed	RWD	kg	6.97E-05	6.53E-07	2.02E-06	6.37E-10	7.15E-08	1.48E-05	4.18E-09	-3.67E-05

Output flows

Impact indicators	**Abbr.**	**Unit**	**A1**	**A2**	**A3**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	CRU	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
Materials for recycling	MFR	kg	0.00E+00	0.00E+00	2.46E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	MER	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
Exported thermal energy	EET	MJ, net calorific value	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 electricity energy	EEE	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

DB WEISS Tip 2

Environmental impact indicators

Impact indicators	Abbr.	Unit	A1	A2	A3	C1	C2	C3	C4	D
Climate change total	GWP-Total	kg CO2 eq.	2.89E+00	1.62E-01	1.45E-01	3.98E-04	1.72E-02	6.07E-01	3.61E-03	-1.25E+00
Climate change - Fossil	GWP-Fossil	kg CO2 eq.	2.91E+00	1.62E-01	9.65E-02	3.98E-04	1.71E-02	5.99E-01	3.33E-03	-1.24E+00
Climate change - Biogenic	GWP-Biogenic	kg CO2 eq.	-2.06E-02	1.11E-04	4.85E-02	1.06E-07	1.18E-05	7.28E-03	2.72E-04	-1.22E-02
Climate change - Land use and LU change	GWP-Luluc	kg CO2 eq.	1.76E-03	5.36E-05	3.61E-04	3.32E-08	5.67E-06	3.18E-04	1.16E-07	-9.06E-04
Ozone depletion	ODP	kg CFC-11 eq.	1.27E-06	3.53E-09	2.47E-08	8.55E-12	3.74E-10	4.03E-09	1.50E-11	-9.37E-07
Acidification	AP	mol H+ eq.	1.56E-02	5.20E-04	4.36E-04	3.56E-06	5.50E-05	9.47E-04	3.37E-06	-4.10E-03
Eutrophication, freshwater	EP - freshwater	kg P eq.	1.17E-03	1.11E-05	2.30E-05	1.22E-08	1.17E-06	1.04E-04	4.57E-08	-4.10E-04
Eutrophication, marine	EP - marine	kg N eq.	2.63E-03	1.75E-04	1.72E-04	1.66E-06	1.85E-05	2.54E-04	1.87E-05	-8.42E-04
Eutrophication, terrestrial	EP-terrestrial	mol N eq.	2.60E-02	1.90E-03	1.54E-03	1.81E-05	2.01E-04	2.13E-03	1.50E-05	-8.18E-03
Photochemical ozone formation	POCP	kg NMVOC eq.	1.12E-02	7.88E-04	6.85E-04	5.46E-06	8.34E-05	6.90E-04	6.08E-06	-4.87E-03
*Resource use, minerals and metals***	ADPE	kg Sb eq.	2.51E-05	5.46E-07	3.39E-07	1.37E-10	5.78E-08	1.57E-06	1.03E-09	-1.53E-05
*Resource use, fossils***	ADPF	MJ, net calorific value	5.77E+01	2.30E+00	1.60E+00	5.17E-03	2.43E-01	3.00E+00	1.15E-02	-3.14E+01
*Water use***	WDP	m3 world eq. deprived	1.67E+00	8.90E-03	2.87E-02	8.92E-06	9.43E-04	3.65E-01	-2.48E-04	-1.12E+00

*Disclaimer 1 - 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.

**Disclaimer 2 – The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

Additional environmental impact indicators

Impact indicators	Abbr.	Unit	A1	A2	A3	C1	C2	C3	C4	D
Particulate matter emissions	PM	Disease incidence	6.44E-08	1.29E-08	1.03E-08	1.01E-10	1.37E-09	7.58E-09	7.90E-11	-2.64E-08
Ionizing radiation, human health*	IRP	kBq U235 eq.	2.66E-01	2.74E-03	7.86E-03	2.59E-06	2.90E-04	5.79E-02	1.81E-05	-1.40E-01
Eco-toxicity - freshwater**	ETP-fw	CTUe	1.32E+01	3.04E-01	3.83E-01	2.46E-04	3.22E-02	2.28E+01	3.02E-01	-7.13E+00
Human toxicity, cancer effect **	HTP-c	CTUh	3.47E-09	2.75E-11	2.30E-10	4.01E-14	2.91E-12	1.81E-10	1.53E-13	-2.39E-09
Human toxicity, non-cancer effects **	HTP-nc	CTUh	2.63E-08	1.43E-09	9.04E-10	6.33E-13	1.51E-10	3.76E-09	1.04E-11	-1.24E-08
Land use related impacts/Soil quality **	SQP	dimensionless	1.06E+01	1.36E+00	2.99E+01	3.07E-04	1.44E-01	1.04E+00	2.74E-02	-3.17E+00

Use of resources

Impact indicators	Abbr.	Unit	A1	A2	A3	C1	C2	C3	C4	D
Renewable primary energy as energy carrier	PERE	MJ, net calorific value	4.92E+00	3.63E-02	1.82E+00	3.41E-05	3.84E-03	5.88E-01	2.90E-04	-1.34E+00
Renewable primary energy resource as material utilization	PERM	MJ, net calorific value	3.94E-01	0.00E+00	3.07E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources	PERT	MJ, net calorific value	5.31E+00	3.63E-02	4.89E+00	3.41E-05	3.84E-03	5.88E-01	2.90E-04	-1.34E+00
Non-renewable primary energy as energy carrier	PENRE	MJ, net calorific value	3.63E+01	2.30E+00	1.39E+00	5.17E-03	2.43E-01	3.00E+00	1.15E-02	-3.14E+01
Non-renewable primary energy as material utilization	PENRM	MJ, net calorific value	2.13E+01	0.00E+00	2.07E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources	PENRT	MJ, net calorific value	5.77E+01	2.30E+00	1.60E+00	5.17E-03	2.43E-01	3.00E+00	1.15E-02	-3.14E+01
Use of secondary material	SM	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
Use of renewable secondary fuels	RSF	MJ, net calorific value	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 non-renewable secondary fuels	NRSF	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	FW	m3	4.88E-02	2.87E-04	8.11E-04	2.90E-07	3.03E-05	1.37E-02	-2.17E-04	-2.82E-02

Waste categories

Impact indicators	Abbr.	Unit	A1	A2	A3	C1	C2	C3	C4	D
Hazardous waste disposed	HWD	kg	2.58E-03	5.80E-05	2.86E-04	4.73E-08	6.13E-06	4.82E-02	7.43E-05	3.72E-02
Non-hazardous waste disposed	NHWD	kg	1.93E-01	1.10E-01	1.88E-02	3.43E-06	1.16E-02	1.15E-01	4.83E-02	-4.92E-02
Radioactive waste disposed	RWD	kg	6.92E-05	6.75E-07	2.02E-06	6.37E-10	7.15E-08	1.48E-05	4.18E-09	-3.67E-05

Output flows

Impact indicators	Abbr.	Unit	A1	A2	A3	C1	C2	C3	C4	D
Components for re-use	CRU	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
Materials for recycling	MFR	kg	0.00E+00	0.00E+00	2.46E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	MER	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
Exported thermal energy	EET	MJ, net calorific value	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 electricity energy	EEE	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

5. ADDITIONAL ENVIRONMENTAL INFORMATION

This section reports the content of recycled, recovered and by-product material for each product covered by this EPD, in accordance with Annex 7 of the EPDItaly Regulation (Rev. 7.1). Values are declared per product/product code group, as required by point b) of Annex 7 §1.1.1, with pre-consumer and post-consumer fractions indicated separately where applicable. The content has been determined through a mass balance calculation, on the basis of the bill of materials of each product and traceable input material data, as detailed for the production unit, methodology and reference period indicated below each table.

DB WEISS Tip 1

Product type	Product name[1]	Recycled material			Recovered material	By-product material		Total content of Recycled, Recovered, By-product material
		Total (%)	Pre-consumer (%)	Post-consumer (%)		Internal (%)	External (%)	
Frame	CL 2-25	0.00	0.00	0.00	0.00	70	0.00	70
Frame	CLM 2-25	0.00	0.00	0.00	0.00	70	0.00	70
Casement	CZ 2-20	0.00	0.00	0.00	0.00	40	0.00	40

1) All products, whatever their size or colour

Production unit: LB Profile BH d.o.o. — Doboj, Bosnia and Herzegovina

Reference period: 2025

DB WEISS Tip 2

Product type	Product name[1]	Recycled material			Recovered material	By-product material		Total content of Recycled, Recovered, By-product material
		Total (%)	Pre-consumer (%)	Post-consumer (%)		Internal (%)	External (%)	
Frame	CL 2-25	0.00	0.00	0.00	0.00	70	0.00	70
Frame	CLM 2-25	0.00	0.00	0.00	0.00	70	0.00	70
Casement	CZ 2-20	0.00	0.00	0.00	0.00	40	0.00	40

1) All products, whatever their size or colour

Production unit: LB Profile BH d.o.o. — Doboj, Bosnia and Herzegovina

Reference period: 2025

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