

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH:
EN 15804+A2 & ISO 14025

Product name:

in_Liner 2.1

GLASS-FIBRE REINFORCED UV-CURED CIPP LINER

Styrene UPR and Styrene-free vinyltoluene-based UPR



EPD holder:
INSTBUD Sp. z o.o.



Issued on 30.09.2026

Valid until 30.09.2031

GENERAL INFORMATION

EPD OWNER

Manufacturer / EPD Holder	INSTBUD Sp. z o.o.
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Contact details	Phone: +48 12 385 85 50 e-mail: biuro@instbud.eu
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PRODUCT IDENTIFICATION

Product name	in_Liner 2.1 (under trade name in_Liner ECR Std)
Product variants covered	in_Liner UPS (styrene UPR) in_Liner UPSF (styrene-free vinyltoluene-based UPR)
Place(s) of production	Gdów, Poland

EPD INFORMATION

EPD Polska program operator	Multicert Sp. z o.o. Ul. Mydlarska 47, 04-690 Warszawa, Poland www.epd.org.pl epd@epd.org.pl
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	EN 15804+A2
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☒ External verification
EPD verifier	Izabela Sztamberek-Sochan, PhD
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Registration	EPD Polska www.epd.org.pl
Publishing date	30.09.2026
EPD valid until	30.09.2031
Reasons for performing LCA	B2B
Accountability	The EPD Holder is responsible for the information provided and evidence. Multicert Sp. z o.o. does not hold responsibility for the manufacturer information, life cycle assessment data nor supporting evidence.

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.

COMPANY INFORMATION

HOLDER OF THE EPD

INSTBUD Sp. z o.o.

ul. Przemysłowa 3, 32-420 Gdów, Poland

COMPANY PROFILE

INSTBUD Sp. z o.o. has many different activities. This document is dedicated to in_Liner production facility in Gdów, southern Poland, which is one of INSTBUD's activities - manufacturing glass-fibre reinforced cured-in-place pipe (CIPP) liners for the trenchless rehabilitation of sewer and other pipeline systems.

The in_Liner production plant has operated since 2019 and is equipped with dedicated glass-fibre preparation and resin-impregnation lines. According to the manufacturer's current product information, the plant can manufacture liners in diameters from DN150 to DN2000, with an annual production capacity of approximately 300 km.

The manufacturing process combines ECR glass-fibre reinforcement with thermosetting resin systems and controlled impregnation. The in_Liner 2.1 product is installed by pulling the liner into the host pipe and curing it with UV radiation, forming a new structural lining within the existing pipeline.

PRODUCT INFORMATION

PRODUCT DESCRIPTION

The product covered by this Environmental Product Declaration is the in_Liner 2.1 cured-in-place pipe (CIPP) liner designed for trenchless rehabilitation of underground pipelines. The liner is manufactured as a flexible, resin-impregnated glass-fibre composite which is delivered to the installation site in an uncured state and cured inside the existing host pipe.

The structural reinforcement is based on corrosion-resistant ECR glass fibre. The reinforcement is impregnated with an unsaturated polyester resin (UPR) system and protected by inner and outer films used for handling, installation and UV curing. After installation and curing, the composite forms a smooth and structurally continuous pipe-within-a-pipe.

Two resin variants are covered by this EPD:

- in_Liner 2.1 UPS – manufactured using a conventional styrene-based unsaturated polyester resin (UPR). Styrene acts as the reactive diluent and cross-linking monomer in the resin system.
- in_Liner 2.1 UPSF – manufactured using a styrene-free vinyltoluene-based unsaturated polyester resin (VT-UPR). The formulation replaces styrene with vinyltoluene as the reactive diluent and cross-linking monomer in the resin system.

PRODUCT APPLICATION

The declared products are intended for use in residential, commercial, municipal and industrial applications as structural lining systems for underground pipelines, including:

- gravity sewer rehabilitation
- pressure pipeline rehabilitation;
- stormwater drainage and culvert rehabilitation;
- rehabilitation of industrial process pipelines.

The liner is installed by pulling it into the host pipe and curing it with UV radiation. After curing, it forms a smooth-bore structural pipe-within-a-pipe that restores structural integrity and watertightness while avoiding open-trench replacement.

PRODUCT STANDARDS

The in_Liner 2.1 product is covered by National Technical Assessment ITB-KOT-2019/0749. Product manufacture, design and installation are performed in accordance with the applicable technical assessment and the manufacturer's technical documentation.

ADDITIONAL TECHNICAL INFORMATION

Key technical parameters of in_Liner 2.1 according to current manufacturer product information:

Diameter range	DN150–DN2000
Nominal thickness	3÷30 mm in 1 mm increments; greater thickness on request
Maximum liner length	500 m
Resin family	UP / VE; EPD variants use UPR resin systems
Reinforcement	ECR glass fibre
Installation method	Pull-in
Curing method	UV

PRODUCT RAW MATERIAL COMPOSITION

Material composition per 1 kg of uncured liner (declared unit), based on INSTBUD production data for 2025. The composition below is expressed as percentage by mass of the product and sums to 100% for each variant. Detailed per-DU mass balances are provided in the supplementary LCI workbook (tab "Biogenic C & BOM").

Product component	in_Liner 2.1 UPS	in_Liner 2.1 UPSF
ECR glass-fibre reinforcement	57%	50%
Styrene-based UPR matrix	40%	n/a
Vinyltoluene-based UPR matrix (VT-UPR)	n/a	46%
film components	3%	4%

Note: Packaging is excluded from the product composition shown above and is modelled separately in the LCA inventory.

SUBSTANCES OF CONCERN / REACH

The products covered by this EPD do not contain any substances from the REACH Candidate List of Substances of Very High Concern (SVHC) in concentrations exceeding 0.1% by weight.

PRODUCT LIFE-CYCLE

RAW MATERIAL SUPPLY AND TRANSPORT (A1–A2)

Module A1 covers the extraction and production of all raw materials used in the manufacture of the in_Liner 2.1. For both variants, this includes ECR glass-fibre reinforcement and the base components of the UPR resin, the reactive monomer (styrene for variant UPS; vinyltoluene-based reactive monomer for variant UPSF), polymerisation initiators and inhibitors, the outer polyethylene or polyurethane film, and wooden pallets.

The GWP-biogenic contribution in A1 for variant UPS is associated mainly with the sawnwood used in wooden pallets. For variant UPSF, no significant bio-based carbon is present in the liner resin; the negative GWP-biogenic result in A1 arises from biogenic carbon flows in the background supply chains, including the wooden pallets.

Module A2 covers the transport of all raw materials and packaging from suppliers to the in_Liner manufacturing facility in Gdów. Transport distances and modes are based on supplier locations and logistics confirmed by INSTBUD for the 2025 reference year. The inventory includes road transport for resin systems, films and packaging materials, combined sea and road transport for imported ECR glass-fibre reinforcement, and local sourcing of wooden pallets. Detailed transport distances and modes are documented in the supplementary LCI workbook.

MANUFACTURING (A3)

Module A3 covers all manufacturing activities at the INSTBUD facility: resin compounding and mixing, glass-fibre reinforcement preparation, resin impregnation of the liner tube, outer film application, rolling onto mandrels and packaging. The module includes grid electricity consumption, natural gas (where applicable), process water, and the treatment of production waste.

For variant UPS, Module A3 also includes the use of styrene monomer and/or acetone as cleaning solvents in equipment maintenance. For variant UPSF, these solvent flows are absent.

USE STAGE (B1–B7)

All use-stage modules (B1–B7) are declared as Module Not Relevant (MNR) for the in_Liner 2.1. Once installed and cured inside a host pipe, the liner requires no maintenance, repair, replacement or refurbishment over its service life. Operational energy use and operational water use are likewise not attributable to the liner itself. No use-stage material, energy or water inputs are attributed to the liner under the declared scenario.

END OF LIFE STAGE (C1–C4) AND MODULE D

Modules C1 (Deconstruction/demolition), C2 (Transport), C3 (Waste processing), C4 (Disposal) and Module D are included within the declared system boundary of this EPD. Once installed and UV-cured, the in_Liner 2.1 forms a permanent structural lining integrated with the host pipeline. Under the declared end-of-life scenario, the liner remains in situ and is not separately deinstalled, removed, transported or processed as waste. Consequently, no physical activity occurs in modules C1–C4 and the corresponding environmental indicator values are declared as zero (0), in accordance with EN 15804+A2, Clause 7.2.2. Module D is also declared with zero values because no liner material leaves the product system for reuse, recycling or energy recovery; therefore no benefits or loads beyond the system boundary arise.

LIFE-CYCLE ASSESSMENT

LIFE-CYCLE ASSESSMENT INFORMATION

Period for data	2025
LCA software	openLCA 2.6.1
Background database	ecoinvent 3.9.1, cut-off system model
Characterisation method	EN 15804+A2 (EF 3.1)

DECLARED UNIT

Declared unit	1 kg of uncured in_Liner 2.1 liner at the factory gate
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BIOGENIC CARBON CONTENT

Biogenic carbon content of the product and packaging at the factory gate:

Variant	Biogenic carbon in product [g C/kg liner]	Biogenic carbon in packaging [g C/kg liner]
in_Liner 2.1 UPS	0	21
in_Liner 2.1 UPSF	0	22

Note: For in_Liner 2.1 UPS, the biogenic carbon in packaging originates from the sawnwood used in wooden transport pallets. The physical carbon content of the wooden pallets is approximately 21 g C per kg of liner. For in_Liner 2.1 UPSF, no significant biogenic carbon is present in the liner resin; biogenic carbon is associated with the wooden transport pallets and amounts to approximately 22 g C per kg of liner. Packaging is not part of the product and its end-of-life is outside the declared product end-of-life scenario.

SYSTEM BOUNDARY

The EPD declares product stage modules A1 (Raw material supply), A2 (Transport) and A3 (Manufacturing), together with end-of-life modules C1–C4 and Module D. Modules A4–A5 are Module Not Declared (MND). Use-stage modules B1–B7 are Module Not Relevant (MNR). For the declared end-of-life scenario, the installed liner remains in situ; therefore C1–C4 and D are included and declared with zero values.

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MNR	MNR	MNR	MNR	MNR	MNR	MNR	X	X	X	X	X

X – module included/declared | MND – Module Not Declared | MNR – Module Not Relevant

END-OF-LIFE SCENARIO DOCUMENTATION

Scenario parameter	Declared scenario
C1 – Deconstruction / removal	No separate removal; cured liner remains in situ as part of the host pipeline.
C2 – Transport	0 kg transported / 0 km attributable to the liner.
C3 – Waste processing	0 kg processed.
C4 – Disposal	0 kg disposed as a separate liner waste stream.
Material recovery	0 kg.
Energy recovery	0 kg.
Module D	No material or energy flows cross the system boundary for reuse, recycling or recovery; declared result = 0.

CUT-OFF CRITERIA

The study fully covers all declared modules. All major raw material and energy inputs are included. No single neglected unit process exceeds 1% of the total mass or energy flows. The total of all neglected input and output flows does not exceed 5% of the total mass or energy use. No hazardous materials or substances have been omitted from the system boundary. The production of capital goods (equipment, infrastructure) and their maintenance are excluded.

ESTIMATES AND ASSUMPTIONS

Product-specific material quantities are based on INSTBUD production records and formulation data for 2025. Where individual resin constituents were not separately metered, their shares were derived from the applicable supplier safety data sheets; where concentration ranges were reported, conservative values were used for environmentally significant constituents. For in_Liner 2.1 UPSF, no directly applicable vinyltoluene-based UPR dataset is available in ecoinvent 3.9.1. The resin system was therefore modelled using a foreground adaptation of a generic unsaturated polyester resin process, replacing the styrene input with an equivalent mass of vinyltoluene based on supplier formulation data. Site-level manufacturing inputs not directly attributable to a single variant were allocated by production mass. Electricity used for in-house weaving of dry glass-fibre sleeves, specific to variant UPS, was estimated from equipment power and operating time. Natural gas attributable to office and administrative space heating was excluded from the production system boundary. Dry glass-fibre sleeves manufactured in the preceding reporting period and consumed in 2025 production were included as an A1 material input for variant UPS. Waste treatment routes follow the disposal information confirmed by INSTBUD for the reference year.

ALLOCATION

Product-specific inputs (resin type and quantity, reinforcement, inner and outer films, wear layer, and adhesive) are attributed directly to each variant (UPS and UPSF) from variant-specific recipes confirmed by INSTBUD for the 2025 reference year. Shared manufacturing facility inputs (grid electricity, natural gas excluding space heating, process water, and shared waste streams) are allocated by production mass.

DATA QUALITY

The LCA model is based primarily on site-specific data provided by INSTBUD Sp. z o.o. for the 2025 reference year. These data include product formulations, annual production volumes, consumption of electricity, natural gas and process water, production waste, packaging materials and transport information for the main raw materials. Product-specific material inputs are based on the actual formulations of the in_Liner 2.1 UPS and in_Liner 2.1 UPSF variants, while shared manufacturing inputs are allocated between the variants according to the allocation rules described above.

Background processes were modelled using ecoinvent 3.9.1 with the cut-off system model. Datasets were selected according to geographic representativeness, with Polish datasets used where available, followed by European (RER) and global (GLO) datasets where no more specific dataset was available. Where no directly representative background process existed, the closest technically appropriate dataset or a documented foreground adaptation was used.

Environmental impacts were calculated in openLCA 2.6.1 using the EN 15804+A2 characterisation method based on EF 3.1. The combination of recent primary production data, product-specific recipes and geographically representative background datasets is considered appropriate for representing the declared products and manufacturing conditions at the INSTBUD facility in Gdów.

For the vinyltoluene-based resin system, where no directly applicable ecoinvent dataset was available, the modelling approach is documented separately in the Estimates and Assumptions section.

GEOGRAPHIC REPRESENTATIVENESS

The product system is manufactured in Poland. Background processes use Polish datasets where available, with European (RER) and global (GLO) datasets as fallbacks in accordance with ecoinvent 3.9.1 geography hierarchy.

ENVIRONMENTAL IMPACT DATA – in_Liner 2.1 UPS (*styrene UPR*)

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1	A2	A3	A1–A3	A4–A5	B1–B7	C1–C3	C4	D
GWP-total	kg CO ₂ eq.	2.91E+00	9.32E-02	3.33E-01	3.34E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
GWP-fossil	kg CO ₂ eq.	2.96E+00	9.31E-02	3.31E-01	3.38E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
GWP-biogenic	kg CO ₂ eq.	-4.83E-02	4.77E-05	1.89E-03	-4.63E-02	MND	MNR	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO ₂ eq.	2.40E-03	5.11E-05	9.28E-05	2.54E-03	MND	MNR	0.00E+00	0.00E+00	0.00E+00
GWP-GHG *	kg CO ₂ eq.	2.96E+00	9.32E-02	3.32E-01	3.39E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
ODP	kg CFC-11 eq.	1.93E-06	1.87E-09	3.93E-09	1.93E-06	MND	MNR	0.00E+00	0.00E+00	0.00E+00
AP	mol H ⁺ eq.	1.66E-02	9.80E-04	2.00E-03	1.96E-02	MND	MNR	0.00E+00	0.00E+00	0.00E+00
EP-freshwater	kg P eq.	8.10E-04	5.68E-06	3.30E-04	1.15E-03	MND	MNR	0.00E+00	0.00E+00	0.00E+00
EP-marine	kg N eq.	3.22E-03	2.70E-04	3.10E-04	3.80E-03	MND	MNR	0.00E+00	0.00E+00	0.00E+00
EP-terrestrial	mol N eq.	3.37E-02	2.94E-03	2.61E-03	3.93E-02	MND	MNR	0.00E+00	0.00E+00	0.00E+00
POCP	kg NMVOC eq.	1.26E-02	9.20E-04	8.40E-04	1.44E-02	MND	MNR	0.00E+00	0.00E+00	0.00E+00
ADPE ²	kg Sb eq.	1.60E-04	1.48E-07	1.15E-07	1.60E-04	MND	MNR	0.00E+00	0.00E+00	0.00E+00
ADPF ²	MJ	6.12E+01	1.31E+00	3.98E+00	6.64E+01	MND	MNR	0.00E+00	0.00E+00	0.00E+00
WDP ²	m ³ World eq.	1.36E+00	5.99E-03	6.12E-02	1.42E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00

* GWP-GHG is reported as a supplementary climate indicator. The values are taken from the openLCA EN 15804+A2 (EF 3.1) method category “Global warming potential except emissions and uptake of biogenic carbon (GWP-IOBC/GHG)”. GWP-GHG is not one of the mandatory EN 15804+A2 core indicators.

Disclaimer 2: The results of ADPE, ADPF, WDP, ETP-fw, HTP-c, HTP-nc and SQP shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1–A3	A4–A5	B1–B7	C1–C3	C4	D
PM	Disease Incidence	1.33E-07	6.08E-09	3.49E-09	1.42E-07	MND	MNR	0.00E+00	0.00E+00	0.00E+00
IRP ¹	kBq U235 eq.	3.37E-01	1.44E-03	1.06E-02	3.49E-01	MND	MNR	0.00E+00	0.00E+00	0.00E+00
ETP-fw ²	CTUe	3.53E+01	6.30E-01	9.05E-01	3.68E+01	MND	MNR	0.00E+00	0.00E+00	0.00E+00
HTP-c ²	CTUh	2.31E-09	4.07E-11	9.67E-11	2.45E-09	MND	MNR	0.00E+00	0.00E+00	0.00E+00
HTP-nc ²	CTUh	5.74E-08	7.06E-10	3.17E-09	6.13E-08	MND	MNR	0.00E+00	0.00E+00	0.00E+00
SQP ²	Dimensionless	1.36E+01	9.91E-01	6.87E-01	1.52E+01	MND	MNR	0.00E+00	0.00E+00	0.00E+00

PM -- Particulate matter emissions; IRP -- Ionising radiation, human health; ETP-fw -- Ecotoxicity, freshwater; HTP-c -- Human toxicity, cancer effects; HTP-nc -- Human toxicity, non-cancer effects; SQP -- Soil quality potential.

Disclaimer 1 (IRP): This category deals mainly with the eventual impact of low-dose ionising 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.

Disclaimer 2: The results of ADPE, ADPF, WDP, ETP-fw, HTP-c, HTP-nc and SQP shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1–A3	A4–A5	B1–B7	C1–C3	C4	D
PERE	MJ	4.28E+00	1.70E-02	3.00E-01	4.59E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	4.28E+00	1.70E-02	3.00E-01	4.59E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
PENRE	MJ	6.12E+01	1.31E+00	3.98E+00	6.64E+01	MND	MNR	0.00E+00	0.00E+00	0.00E+00
PENRM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	6.12E+01	1.31E+00	3.98E+00	6.64E+01	MND	MNR	0.00E+00	0.00E+00	0.00E+00
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
FW	m ³	4.54E-02	2.00E-04	8.36E-03	5.40E-02	MND	MNR	0.00E+00	0.00E+00	0.00E+00

PERE -- Use of renewable primary energy as energy carrier; PERM -- Use of renewable primary energy as raw material; PERT -- Total use of renewable primary energy (PERE + PERM); PENRE -- Use of non-renewable primary energy as energy carrier; PENRM -- Use of non-renewable primary energy as raw material; PENRT -- Total use of non-renewable primary energy (PENRE + PENRM); SM -- Use of secondary material; RSF -- Use of renewable secondary fuels; NRSF -- Use of non-renewable secondary fuels; FW -- Net use of fresh water.

OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1–A3	A4–A5	B1–B7	C1–C3	C4	D
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
EET	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00

CRU -- Components for re-use; MFR -- Materials for recycling; MER -- Materials for energy recovery; EEE -- Exported electrical energy; EET -- Exported thermal energy.

WASTE

Impact category	Unit	A1	A2	A3	A1–A3	A4–A5	B1–B7	C1–C3	C4	D
HWD	kg	1.70E-04	7.73E-06	6.33E-06	1.84E-04	MND	MNR	0.00E+00	0.00E+00	0.00E+00
NHWD	kg	4.67E-03	3.08E-05	1.65E-03	6.35E-03	MND	MNR	0.00E+00	0.00E+00	0.00E+00
RWD	kg	8.61E-05	3.46E-07	2.61E-06	8.90E-05	MND	MNR	0.00E+00	0.00E+00	0.00E+00

HWD -- Hazardous waste disposed; NHWD -- Non-hazardous waste disposed; RWD -- Radioactive waste disposed.

ENVIRONMENTAL IMPACT DATA – in_Liner 2.1 UPSF (styrene-free vinyltoluene-based UPR (VT-UPR))

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1	A2	A3	A1–A3	A4–A5	B1–B7	C1–C3	C4	D
GWP-total	kg CO ₂ eq.	2.92E+00	1.34E-01	3.23E-01	3.38E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
GWP-fossil	kg CO ₂ eq.	2.98E+00	1.34E-01	3.21E-01	3.43E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
GWP-biogenic	kg CO ₂ eq.	-5.67E-02	9.46E-05	2.22E-03	-5.44E-02	MND	MNR	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO ₂ eq.	2.45E-03	7.31E-05	8.89E-05	2.61E-03	MND	MNR	0.00E+00	0.00E+00	0.00E+00
GWP-GHG *	kg CO ₂ eq.	2.99E+00	1.34E-01	3.22E-01	3.44E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
ODP	kg CFC-11 eq.	2.26E-06	2.75E-09	3.75E-09	2.27E-06	MND	MNR	0.00E+00	0.00E+00	0.00E+00
AP	mol H ⁺ eq.	1.57E-02	9.80E-04	1.95E-03	1.86E-02	MND	MNR	0.00E+00	0.00E+00	0.00E+00
EP-freshwater	kg P eq.	7.70E-04	8.58E-06	3.20E-04	1.10E-03	MND	MNR	0.00E+00	0.00E+00	0.00E+00
EP-marine	kg N eq.	3.10E-03	2.50E-04	3.00E-04	3.65E-03	MND	MNR	0.00E+00	0.00E+00	0.00E+00
EP-terrestrial	mol N eq.	3.24E-02	2.67E-03	2.56E-03	3.76E-02	MND	MNR	0.00E+00	0.00E+00	0.00E+00
POCP	kg NMVOC eq.	1.21E-02	9.30E-04	7.90E-04	1.38E-02	MND	MNR	0.00E+00	0.00E+00	0.00E+00
ADPE ²	kg Sb eq.	1.50E-04	2.71E-07	1.08E-07	1.50E-04	MND	MNR	0.00E+00	0.00E+00	0.00E+00
ADPF ²	MJ	6.55E+01	1.87E+00	3.82E+00	7.12E+01	MND	MNR	0.00E+00	0.00E+00	0.00E+00
WDP ²	m ³ World eq.	1.53E+00	8.61E-03	5.94E-02	1.59E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00

* GWP-GHG is reported as a supplementary climate indicator. The values are taken from the openLCA EN 15804+A2 (EF 3.1) method category “Global warming potential except emissions and uptake of biogenic carbon (GWP-IOBC/GHG)”. GWP-GHG is not one of the mandatory EN 15804+A2 core indicators.

Disclaimer 2: The results of ADPE, ADPF, WDP, ETP-fw, HTP-c, HTP-nc and SQP shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1–A3	A4–A5	B1–B7	C1–C3	C4	D
PM	Disease Incidence	1.22E-07	7.21E-09	3.69E-09	1.32E-07	MND	MNR	0.00E+00	0.00E+00	0.00E+00
IRP ¹	kBq U235 eq.	3.51E-01	2.24E-03	9.81E-03	3.63E-01	MND	MNR	0.00E+00	0.00E+00	0.00E+00
ETP-fw ²	CTUe	3.94E+01	9.14E-01	8.89E-01	4.12E+01	MND	MNR	0.00E+00	0.00E+00	0.00E+00
HTP-c ²	CTUh	1.47E-09	5.95E-11	9.74E-11	1.63E-09	MND	MNR	0.00E+00	0.00E+00	0.00E+00
HTP-nc ²	CTUh	5.45E-08	1.03E-09	3.12E-09	5.86E-08	MND	MNR	0.00E+00	0.00E+00	0.00E+00
SQP ²	Dimensionless	1.41E+01	9.58E-01	6.67E-01	1.57E+01	MND	MNR	0.00E+00	0.00E+00	0.00E+00

PM -- Particulate matter emissions; IRP -- Ionising radiation, human health; ETP-fw -- Ecotoxicity, freshwater; HTP-c -- Human toxicity, cancer effects; HTP-nc -- Human toxicity, non-cancer effects; SQP -- Soil quality potential.

Disclaimer 1 (IRP): This category deals mainly with the eventual impact of low-dose ionising 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.

Disclaimer 2: The results of ADPE, ADPF, WDP, ETP-fw, HTP-c, HTP-nc and SQP shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1–A3	A4–A5	B1–B7	C1–C3	C4	D
PERE	MJ	4.55E+00	2.65E-02	2.90E-01	4.87E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	4.55E+00	2.65E-02	2.90E-01	4.87E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
PENRE	MJ	6.55E+01	1.87E+00	3.82E+00	7.12E+01	MND	MNR	0.00E+00	0.00E+00	0.00E+00
PENRM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	6.55E+01	1.87E+00	3.82E+00	7.12E+01	MND	MNR	0.00E+00	0.00E+00	0.00E+00
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
FW	m ³	4.98E-02	2.80E-04	8.65E-03	5.87E-02	MND	MNR	0.00E+00	0.00E+00	0.00E+00

PERE -- Use of renewable primary energy as energy carrier; PERM -- Use of renewable primary energy as raw material; PERT -- Total use of renewable primary energy (PERE + PERM); PENRE -- Use of non-renewable primary energy as energy carrier; PENRM -- Use of non-renewable primary energy as raw material; PENRT -- Total use of non-renewable primary energy (PENRE + PENRM); SM -- Use of secondary material; RSF -- Use of renewable secondary fuels; NRSF -- Use of non-renewable secondary fuels; FW -- Net use of fresh water.

OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1–A3	A4–A5	B1–B7	C1–C3	C4	D
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00
EET	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MNR	0.00E+00	0.00E+00	0.00E+00

CRU -- Components for re-use; MFR -- Materials for recycling; MER -- Materials for energy recovery; EEE -- Exported electrical energy; EET -- Exported thermal energy.

WASTE

Impact category	Unit	A1	A2	A3	A1–A3	A4–A5	B1–B7	C1–C3	C4	D
HWD	kg	1.70E-04	1.14E-05	5.92E-06	1.87E-04	MND	MNR	0.00E+00	0.00E+00	0.00E+00
NHWD	kg	5.01E-03	5.07E-05	1.65E-03	6.71E-03	MND	MNR	0.00E+00	0.00E+00	0.00E+00
RWD	kg	8.98E-05	5.43E-07	2.42E-06	9.28E-05	MND	MNR	0.00E+00	0.00E+00	0.00E+00

HWD -- Hazardous waste disposed; NHWD -- Non-hazardous waste disposed; RWD -- Radioactive waste disposed.

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Scope	Electricity and heat consumed at the INSTBUD manufacturing facility, as reported in Module A3.
Electricity consumption and supply	100% purchased grid electricity (Polish national grid). No on-site photovoltaic or other renewable generation at the INSTBUD facility.
Electricity data source and quality	Purchased grid electricity modelled using the ecoinvent 3.9.1 dataset "electricity, low voltage {PL} market for electricity, low voltage Cut-off, U". For the GWP-fossil indicator, the default ecoinvent characterisation result was replaced by the location-based, full life-cycle electricity emission factor for Poland.
Climate change emission factor (GWP)	0.599 kg CO ₂ e/kWh for purchased grid electricity (2024 data). Source: poLCA-EN-PL-2024, Multicert Sp. z o.o., EPD Polska programme (www.epd.org.pl), 2026. This correction applies to the GWP-fossil sub-indicator only; all other LCIA characterisation results use ecoinvent 3.9.1 data without modification.

EPD VERIFICATION

The verification procedure of this Environmental Product Declaration (EPD) was carried out in accordance with ISO 14025. The EPD is valid for five years from the date of publication and may be updated earlier in case of significant changes. Renewal of validity requires review and, if necessary, updating.

EPD CONTRIBUTORS

Manufacturer representative	Małgorzata Krasowska
EPD verifier	Izabela Sztamberek-Sochan, PhD

Note: The owner of the declaration is solely responsible for its content. Construction product EPDs may not be comparable if they do not comply with EN 15804. For further information on comparability, see EN 15804 and ISO 14025.

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EPD POLSKA CERTIFICATION



in_Liner

CERTIFICATE

TYPE III EPD DECLARATION

(ENVIRONMENTAL PRODUCT DECLARATION)

Reg. No. EPD-P 04.09.2026



This document confirms that the Environmental Product Declaration developed by **Instbud Sp. z o.o.** for:

in_Liner 2.1 GLASS-FIBRE REINFORCED UV-CURED CIPP LINER
Styrene UPR and Styrene-free vinyltoluene-based UPR

manufactured in accordance with the National Technical Assessment ITB-KOT-2019/0749 meets the requirements of standards **EN 15804:2012+A2:2019** and **ISO 14025**, and that the data contained therein has been prepared correctly.

The Declaration was published on September 30, 2026 and is valid until September 30, 2031 or until it is deregistered or its publication on the website www.epd.org.pl is discontinued.

Authenticity of this certificate can be confirmed in the public register at www.epd.org.pl



Izabela Sztamberek-Sochan, Ph.D.
EPD Polska Verifier



Grzegorz Suwara
CEO Multicert Sp. z o.o.

Warsaw, September 30, 2026