ENVIRONMENTAL PRODUCT DECLARATION

Rigid Conduit

In accordance with: ISO 14025:2006, EN 15804:2012+A2:2019/AC:2021

Products included in the EPD:

Rigid conduit

EPD Owner
Dietzel GmbH

Programme
International EPD System
www.environdec.com

Programme operator
EPD International AB

Registration number
EPD-IES-0027425:001

Approval date
2025-12-08

Validity date
2030-12-07

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com

EPD of multiple products based on the average results of the product group

EPD INTERNATIONAL EPD SYSTEM

ECO PLATFORM EPD VERIFIED

DIETZEL UNIVOLT full of energy.

GENERAL INFORMATION

Programme information

Programme	International EPD System
Address	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website	www.environdec.com
E-mail	support@environdec.com

Product category rules

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)	
Product Category Rules (PCR)	2019:14 Construction products (EN 15804+A2) (version 2.0.1) 2.0.1
PCR review was conducted by	The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: Rob Rouwette (chair), Noa Meron (co-chair). The review panel may be contacted via the Secretariat www.environdec.com/support.

Verification

LCA accountability	ran.tao@tuv.com, ran.tao@tuv.com, Dietzel GmbH
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via	☑ EPD verification through an individual EPD verification ☐ EPD verification through EPD Process Certification* ☐ EPD verification through a fully pre-verified tool
Third-party verifier	Niels Jungbluth (ESU-services Ltd)
Approved by	International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier	☐ Yes ☑ No

*EPD Process Certification involves an accredited certification body certifying and periodically auditing the EPD process and conducting external and independent verification of EPDs that are regularly published. More information can be found in the General Programme Instructions on www.environdec.com. International EPD System.

Ownership and limitations on use of EPD

Limitations

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.

Ownership

The EPD Owner has the sole ownership, liability, and responsibility for the EPD.

INFORMATION ABOUT EPD OWNER

EPD Owner	Dietzel GmbH
Contact person name	Andreas Wanzenbeock
Contact person e-mail	andreas.wanzenboeck@dietzel-univolt.com
Organisation address	Austria Vienna 1110 1.Haidequerstrasse 3-5

Description of the organisation of the EPD Owner

DIETZEL GmbH is a manufacturing and trading family-owned company based in Vienna, Austria. DIETZEL GmbH manufactures electrical conduits and accessories, cable protection systems and various other products for electrical installation, structural and civil engineering, and road construction at their production sites in Vienna (Austria), Pezinok (Slovakia) and Dongguan (China).

PRODUCT INFORMATION

Product name	Rigid conduit
Product identification	Rigid conduit (Polypropylene)
Product description	Rigid conduit, also known as a rod or insulated conduit, is a straight protective tube used to route and protect electrical cables; it is supplied in straight lengths (typically 2–3 meters). It's manufactured from polypropylene; it's non-flame propagating, halogen free and low smoke (LSF0H).
Technical purpose of product	Areas of application of rigid conduits: • Flush mounted and in screed: for heavy duty installations in masonry or floors. • Exposed installations: in industrial buildings, garages or basements where mechanical protection and a tidy appearance are required. • Concrete installations: in concrete ceilings or walls where the conduit must withstand the forces exerted during casting.
Manufacturing or service provision description	The production of polypropylene pipes involves several key steps: First, polypropylene granulates, colorants, and flame retardant additives are automatically fed into an extruder. Inside the heated barrel, a rotating screw melts the material into a homogeneous state. The molten polymer is then forced through a die and mandrel to form the pipe's shape and wall thickness. The soft pipe is calibrated and cooled in a vacuum tank or water bath to solidify and fix its geometry. A haul-off unit ensures steady pulling of the pipe, maintaining dimensional accuracy, and finally, the pipe is cut to the required lengths, typically 3 meters.
Material properties	Linear mass density: 0.13 kg/m
Manufacturing site	Dietzel GmbH Dietzel GmbH Austria Vienna 1110
UN CPC code	36320. Tubes, pipes and hoses, and fittings therefor, of plastics
Geographical scope(s)	Austria, Europe
Geographical scope description	The product is manufactured in Austria and used within Europe.

PRODUCT IMAGES

CONTENT DECLARATION

Content declaration of multiple products	The content below describes the average content of the rigid conduits produced in 2024.
Hazardous and toxic substances	The product does not contain any substances from the SVHC candidate list in concentrations exceeding 0.1% of its weight.

PRODUCT CONTENT

Content name	Mass, kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material[1], kg C/declared unit
Polypropylene	0.12	0	0	0
Pigment	0.005	0	0	0
Flame retardant	0.005	0	0	0
Total	**0.13**	**0**	**0**	**0**
Note 1	1 kg biogenic carbon is equivalent to 44/12 kg of CO_2			

PACKAGING MATERIALS

Material name	Mass, kg	Mass-% (versus the product)	Biogenic material[1], kg C/declared unit
PE film	0.0042	3	0
Pallet	0.00057	0.4	0.0002
Steel band	0.00023	0.2	0
Total	**0.005**	**3.6**	**0.0002**
Note 1	1 kg biogenic carbon is equivalent to 44/12 kg of CO_2		

LCA INFORMATION

EPD based on declared or functional unit	Declared unit
Declared unit and reference flow	Rigid conduit Length: 1 m
Conversion factor to mass	0.13
Are infrastructure or capital goods included in any upstream, core or downstream processes?	☐ Yes ☑ No
Data sources used for this EPD	ecoinvent database (general) ecoinvent 3.11 database Other database GaBi Database: MLC 2025.2
LCA Software	LCA for Experts (formerly GaBi Software) N/A
Version of the EN 15804 reference package	EF Reference Package 3.1
Characterisation methods	EN 15804 + A2 (based on EF 3.1)
Technology description including background system	The products considered are rigid conduits according to EN 61386-21. The product consists on polypropylene, pigment and flame retardant. The polypropylene content is over 90%.
Scrap (recycled material) inputs contribution level	Less than 10% of the GWP-GHG results in modules A1-A3 come from scrap inputs

Data quality assessment

Description of data quality assessment and reference years	Data quality is considered good and the reference year is 2024

DATA QUALITY ASSESSMENT

Process name	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Manufacturing of raw materials	Database	MLC 2025.2, Ecoinvent 3.11	2024	Representative generic datasets	
Input transpot	Database	MLC 2025.2	2024	Primary data	3%
Manufacturing of products	Collected data	MLC 2025.2	2024	Primary data	15%
Manufacturing of product packaging	Database	MLC 2025.2	2024	Representative generic datasets	
Generation of electricity used in production	Supplier specific data	Supplier	2024	Primary data	3%
Total share of primary data, of GWP-GHG results for A1-A3					**21%**
Note	The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.				

ELECTRICITY USED IN THE MANUFACTURING PROCESS IN A3 (A5 FOR SERVICES)

Type of electricity mix	Specific electricity mix as generated, or purchased from an electricity supplier, demonstrated by a contractual instrument	
Energy sources	Hydro	1.08%
	Wind	11.94%
	Solar	4.95%
	Biomass	5.18%
	Geothermal	0%
	Waste	0%
	Nuclear	0%
	Natural gas	69.9%
	Coal	0%

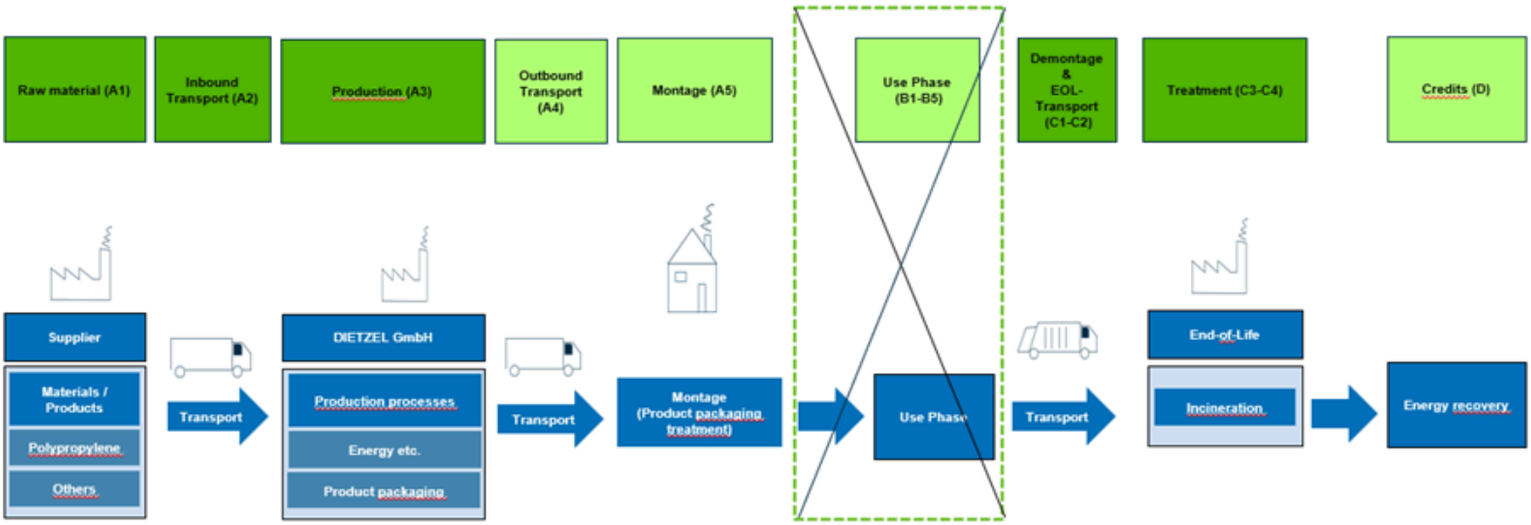
	Oil	0%
	Peat	0%
	Other	6.95%
Climate impact (GWP-GHG):	0.38 kg CO_2 eq./kWh	

SYSTEM BOUNDARY

Description of the System boundary	b) Cradle to gate with options, modules C1-C4, module D and with optional modules (A1-A3 + C + D and additional modules).
Excluded modules	Yes, there is an excluded module, or there are excluded modules
Justification for omission of modules	Module B are excluded because of the different applications and the long lifespan of the product

	Product stage			**Construction process stage**		**Use stage**							**End of life stage**				**Beyond product life cycle**
	Raw material supply	Transport	Manufacturing	Transport to site	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction 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
Modules declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	Austria	Austria	Austria	Europe	Europe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Europe	Europe	Europe	Europe	Europe
Share of specific data	21%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disclaimer	The share of specific/primary data and both variations (products and sites) refer to GWP-GHG results only.																

Process flow diagram(s) related images



DEFAULT SCENARIO

Name of the default scenario	Scenario for rigid conduit
Description of the default scenario	Scenarios are assumed for A4, A5 and C modules.

Module A4: Transport to the building site

Explanatory name of the default scenario in module A4	Distribution
Description of the default scenario in module A4	Average client-specific distance with default parameter of truck transport is considered.

Module A4 information	Value	Unit
Distance	846	km
Capacity utilization (including empty returns)	55	%
Load capacity	20000-26000	kg

Module A5: Installation in the building

Explanatory name of the default scenario in module A5	Packaging treatment
Description of the default scenario in module A5	50km is assumed for transport distance and the packaging is assumed to be incinerated.

Module A5 information	Value	Unit
Transport to waste treatment	50	km
Incineration of packaging waste	100	%

Module C: End-of-life

Explanatory name of the default scenario in module C	End-of-life treatment
Description of the default scenario in module C	5kWh /t diesel is assumed for demolition and the product is assumed to be transported 50 km and 100% incinerated.

Module C information	Value	Unit
Transport to waste treatment	50	km
Waste incineration	100	%
Diesel used in demolition of 1 ton product	5	kWh

Module D: Beyond product life cycle

Explanatory name of the default scenario in module D	Resource recovery
Description of the default scenario in module D	Avoided production of electricity and steam in another product system due to the incineration processes of packaging materials and products from end-of-life were considered

Module D information	Value	Unit
Electricity credits from A5	0.020	MJ
Thermal energy credits from A5	0.036	MJ
Electricity credits from C3	0.86	MJ
Thermal energy credits from C3	1.53	MJ

ENVIRONMENTAL PERFORMANCE

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Mandatory environmental performance indicators according to EN 15804

Impact category	Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate change - total	GWP-total	kg CO_2 eq.	3.65E-1	1.22E-2	1.15E-2	ND	ND	ND	ND	ND	ND	ND	2.34E-4	6.95E-4	4.04E-1	0.00E+0	-1.95E-1
Climate change - fossil	GWP-fossil	kg CO_2 eq.	3.63E-1	1.22E-2	1.06E-2	ND	ND	ND	ND	ND	ND	ND	2.34E-4	6.94E-4	4.04E-1	0.00E+0	-1.94E-1
Climate change - biogenic	GWP-biogenic	kg CO_2 eq.	1.62E-3	1.37E-5	9.08E-4	ND	ND	ND	ND	ND	ND	ND	4.73E-8	7.78E-7	1.21E-5	0.00E+0	-9.19E-4
Climate change - land use and land-use change	GWP-luluc	kg CO_2 eq.	1.10E-4	1.21E-6	8.75E-7	ND	ND	ND	ND	ND	ND	ND	2.39E-8	6.86E-8	3.41E-6	0.00E+0	-2.76E-4
Ozone depletion	ODP	kg CFC-11 eq.	7.15E-11	1.81E-15	2.56E-15	ND	ND	ND	ND	ND	ND	ND	3.47E-12	1.03E-16	2.25E-14	0.00E+0	-1.60E-12
Acidification	AP	mol H^+ eq.	6.16E-4	1.11E-5	1.61E-6	ND	ND	ND	ND	ND	ND	ND	2.09E-6	6.33E-7	4.06E-5	0.00E+0	-3.25E-4
Eutrophication aquatic freshwater	EP-freshwater	kg P eq.	3.86E-6	2.97E-9	4.20E-10	ND	ND	ND	ND	ND	ND	ND	7.53E-9	1.69E-10	2.74E-9	0.00E+0	-1.76E-7
Eutrophication aquatic marine	EP-marine	kg N eq.	1.58E-4	3.55E-6	4.54E-7	ND	ND	ND	ND	ND	ND	ND	9.73E-7	2.02E-7	8.72E-6	0.00E+0	-6.80E-5
Eutrophication terrestrial	EP-terrestrial	mol N eq.	1.71E-3	4.06E-5	7.25E-6	ND	ND	ND	ND	ND	ND	ND	1.06E-5	2.31E-6	1.92E-4	0.00E+0	-7.60E-4
Photochemical ozone formation	POCP	kg NMVOC eq.	6.01E-4	1.24E-5	1.29E-6	ND	ND	ND	ND	ND	ND	ND	3.18E-6	7.08E-7	2.59E-5	0.00E+0	-1.90E-4
Depletion of abiotic resources - minerals and metals	ADP-minerals&metals[1]	kg Sb eq.	1.83E-7	3.50E-10	2.92E-11	ND	ND	ND	ND	ND	ND	ND	8.34E-11	1.99E-11	2.54E-10	0.00E+0	-1.98E-8
Depletion of abiotic resources - fossil fuels	ADP-fossil[1]	MJ, net calorific value	1.06E+1	1.62E-1	5.66E-3	ND	ND	ND	ND	ND	ND	ND	3.01E-3	9.21E-3	4.74E-2	0.00E+0	-3.41E+0
Water use	WDP[1]	m^3 world eq. deprived	1.03E-2	3.07E-5	1.13E-3	ND	ND	ND	ND	ND	ND	ND	9.22E-6	1.75E-6	3.72E-2	0.00E+0	-1.42E-2
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption																
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).																
Disclaimer 1	The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator																

Additional mandatory environmental performance indicators

Impact category	Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate change - GWP-GHG	GWP-GHG[1]	kg CO_2 eq.	3.63E-1	1.22E-2	1.06E-2	ND	ND	ND	ND	ND	ND	ND	2.34E-4	6.94E-4	4.04E-1	0.00E+0	-1.95E-1
Acronyms	GWP-GHG = Global warming potential greenhouse gas.																
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).																
Disclaimer 1	The GWP-GHG indicator is termed GWP-IOBC/GHG in the ILCD+EPD+ data format. The indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.																

Additional voluntary environmental performance indicators according to EN 15804

Impact category	Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter emissions	PM	Disease incidence	5.30E-9	1.18E-10	1.90E-11	ND	ND	ND	ND	ND	ND	ND	5.89E-11	6.70E-12	2.37E-10	0.00E+0	6.01E-4
Ionizing radiation - human health	IRP[1]	kBq U235 eq.	6.04E-3	3.83E-5	2.60E-5	ND	ND	ND	ND	ND	ND	ND	1.30E-6	2.18E-6	4.35E-4	0.00E+0	1.83E-7
Eco-toxicity - freshwater	ETP-fw[2]	CTUe	6.46E+0	1.20E-1	3.60E-3	ND	ND	ND	ND	ND	ND	ND	1.61E-4	6.82E-3	1.75E-2	0.00E+0	1.06E+1
Human toxicity - cancer effects	HTP-c[2]	CTUh	1.36E-10	1.84E-12	1.66E-13	ND	ND	ND	ND	ND	ND	ND	2.52E-14	1.04E-13	2.57E-12	0.00E+0	1.03E-2
Human toxicity - non-cancer effects	HTP-nc[2]	CTUh	2.50E-9	3.00E-11	1.26E-11	ND	ND	ND	ND	ND	ND	ND	3.83E-13	1.71E-12	1.19E-11	0.00E+0	0.00E+0
Land-use related impacts/soil quality	SQP[2]	Dimensionless	1.55E+0	9.88E-4	1.28E-3	ND	ND	ND	ND	ND	ND	ND	2.00E-4	5.62E-5	1.48E-2	0.00E+0	3.63E-1
Acronyms	PM = Potential incidence of disease due to particulate matter emissions; IRP = Potential human exposure efficiency relative to U235; ETP-fw = Potential comparative toxic unit for ecosystems; HTP-c = Potential comparative toxic unit for humans; HTP-nc = Potential comparative toxic unit for humans; SQP = Potential soil quality index.																
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).																
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 of these results are high or as there is limited experience with the indicator.																

Resource use indicators according to EN 15804

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ, net calorific value	1.21E+0	1.17E-3	1.27E-2	ND	ND	ND	ND	ND	ND	ND	1.92E-5	6.64E-5	1.30E-2	0.00E+0	-1.08E+0
PERM	MJ, net calorific value	1.14E-2	0.00E+0	-1.14E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PERT	MJ, net calorific value	1.22E+0	1.17E-3	1.33E-3	ND	ND	ND	ND	ND	ND	ND	1.92E-5	6.64E-5	1.30E-2	0.00E+0	-1.08E+0
PENRE	MJ, net calorific value	1.06E+1	1.62E-1	1.99E-1	ND	ND	ND	ND	ND	ND	ND	3.01E-3	9.21E-3	5.98E+0	0.00E+0	-9.54E+0
PENRM	MJ, net calorific value	6.13E+0	0.00E+0	-1.93E-1	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	-5.93E+0	0.00E+0	0.00E+0
PENRT	MJ, net calorific value	1.67E+1	1.62E-1	5.66E-3	ND	ND	ND	ND	ND	ND	ND	3.01E-3	9.21E-3	4.74E-2	0.00E+0	-9.54E+0
SM	kg	0.00E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
RSF	MJ, net calorific value	0.00E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	MJ, net calorific value	0.00E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	m^3	1.26E-3	1.27E-6	2.68E-5	ND	ND	ND	ND	ND	ND	ND	2.69E-6	7.21E-8	8.72E-4	0.00E+0	-4.99E-4
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water.															
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).															

Waste indicators according to EN 15804

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	3.48E-4	6.14E-12	2.70E-12	ND	ND	ND	ND	ND	ND	ND	2.69E-6	3.49E-13	2.58E-11	0.00E+0	-2.18E-9
NHWD	kg	6.08E-3	1.44E-5	1.08E-3	ND	ND	ND	ND	ND	ND	ND	2.00E-5	8.19E-7	1.60E-3	0.00E+0	-1.79E-3
RWD	kg	5.10E-5	2.71E-7	1.97E-7	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.54E-8	2.72E-6	0.00E+0	-2.45E-4
Acronyms	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed.															
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).															

Output flow indicators according to EN 15804

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
CRU	kg	0.00E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	kg	0.00E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MER	kg	0.00E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EEE	MJ, net calorific value	0.00E+0	0.00E+0	2.04E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	8.61E-1	0.00E+0	0.00E+0
EET	MJ, net calorific value	0.00E+0	0.00E+0	3.64E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	1.53E+0	0.00E+0	0.00E+0
Acronyms	CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy.															
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).															

INFORMATION RELATED TO EPDS OF MULTIPLE PRODUCTS

Description of how the averages have been determined	Annual production data is used to calculate the average by dividing the total length of the products.

ABBREVIATIONS

Not applicable

REFERENCES

General Programme Instructions of International EPD System. Version 5.0.1.

Product Category Rule (PCR) for construction products, version 2.0.1, 2025

EN 15804:2012+A1:2014+A2:2019, Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

VERSION HISTORY

Version 001, 2025-12-08

Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Rigid Conduit

from

DIETZEL GmbH

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products, based on the average results of the product group
EPD registration number:	EPD-IES-0027425:001
Version date:	2025-12-08
Validity date:	2030-12-07

This EPD covers multiple products from the same company. Please refer to the list in the product information section.

GENERAL INFORMATION

Programme Information	
Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	support@environdec.com

Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): *PCR 2019:14 Construction products (EN 15804+A2) (2.0.1)*
PCR review was conducted by: *The Technical Committee of the International EPD System* Rob Rouwette (chair) and Noa Meron (co-*chair)* Contact via info@environdec.*com*

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ **Individual EPD verification without a pre-verified LCA/EPD tool** Third-party verifier: <Niels Jungbluth, ESU-services Ltd.> Approved by: International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.
For further information about comparability, see EN 15804 and ISO 14025.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: DIETZEL GmbH
Address: Haidequerstraße 3-5, 1110 Vienna, Austria
Contact: Andreas Wanzenböck
Address and contact information of the LCA practitioner commissioned by the EPD owner:
Ran Tao
TÜV Rheinland Energy & Environment GmbH
Am Grauen Stein, 51105 Cologne
carbon@de.tuv.com

Description of the organisation: DIETZEL GmbH is a manufacturing and trading family-owned company based in Vienna, Austria. DIETZEL GmbH manufactures electrical conduits and accessories, cable protection systems and various other products for electrical installation, structural and civil engineering, and road construction at their production sites in Vienna (Austria), Pezinok (Slovakia) and Dongguan (China).

Product-related or management system-related certifications: ISO 9001:2015; ISO 14001:2015

PRODUCT INFORMATION

Product name: Rigid Conduit
UN CPC code: 36320
Product description: rigid conduit, also known as a rod or insulated conduit, is a straight protective tube used to route and protect electrical cables; it is supplied in straight lengths (typically 2–3 meters). It's manufactured from polypropylene; it's non-flame propagating, halogen free and low smoke (LSF0H).
Areas of application of rigid conduits:

- Flush mounted and in screed: for heavy duty installations in masonry or floors.
- Exposed installations: in industrial buildings, garages or basements where mechanical protection and a tidy appearance are required.
- Concrete installations: in concrete ceilings or walls where the conduit must withstand the forces exerted during casting.

Name and location of production site(s): Vienna, Austria
References to any relevant websites for more information: www.dietzel-univolt.com

Following products are covered by this EPD:

Type	Weight (g/ m)	Outside Diameter (mm)	Classification acc. EN 61386-21
HFIRM 16	54	16	22431
HFIRM 20	72	20	
HFIRM 25	95	25	
HFIRM 32	142	32	
HFIRM 40	205	40	
HFIRM 50	265	50	

HFPRM 16	76	16	33431
HFPRM 20	104	20	
HFPRM 25	140	25	
HFPRM 32	200	32	
HFPRM 40	275	40	
HFPRM 50	385	50	
HFPRM 63	510	63	
HFBS 16	93	16	44241
HFBS 20	125	20	
HFBS 25	182	25	
HFBS 32	250	32	
HFBS 40	330	40	
HFBS 50	425	50	

CONTENT DECLARATION

- The mass (weight) of one unit of a product, as purchased or per declared unit: average weight with 0,13 kg /m conduit
- Content of the product in the form of a list of materials and substances, and their mass:

Product content	Mass, kg	Share of components	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/product or declared unit
Polypropylene	0,12	92,3%	0%	0%	0%
Pigment	0,005	3,9%	0%	0%	0%
Flame retardant	0,005	3,8%	0%	0%	0%
Total	0,13	100%	0%	0%	0%

- The mass and the content of distribution and/or consumer packaging:

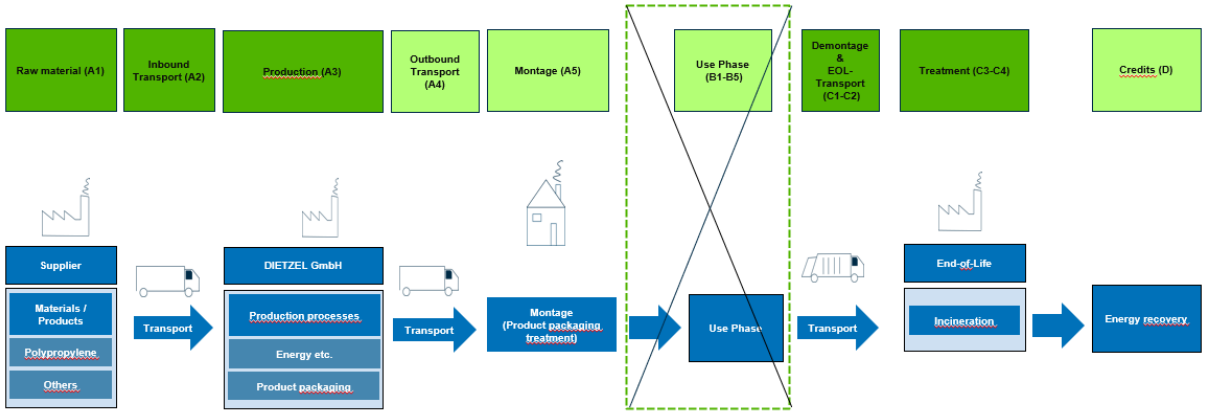
Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C/product or declared unit
PE film	0,0042	3	0
Pallet	0,00057	0,4	0,0002
Steel band	0,00023	0,2	0
Total	0,005	3,6	0,0002

- Information on the environmental and hazardous/toxic properties of a substances contained in the product: The product does not contain any REACH SVHC substances in amounts greater than 0.1%.
- Other information on substances with hazardous and toxic properties: none to declare
- The declared share of biogenic/recycled materials: none to declare for the product itself. Biogenic materials in packaging are shown in the table above.

LCA INFORMATION

Declared unit: 1-meter rigid conduit with an average weight of 0,13 kg (mass excluding packaging)
Reference service life: not applicable
Time representativeness: Jan 2024 - Dec 2024
Geographical scope: A1-A3: Vienna (Austria); A4, A5 and C modules: Europe
Database(s) and LCA software used: MLC 2025.2, Ecoinvent 3.11 with cut-off model; LfE Software
Description of system boundaries:
Cradle to gate with options, A4-A5, modules C1-C4 and module D.

Process flow diagram:
Process flow diagram of the product system, divided into the life-cycle stages and modules (or other division of the product life cycle, if defined in the PCR), showing the main processes included and the system boundary of the LCA. The diagram shall make it clear when the end-of-waste state is reached for main input flows of reused/recycled materials and recovered energy, and for output flows of reused/recycled materials and recovered energy exiting the end-of-life stage.



More information:
Description of the modelling:
A1-A3 – Production stage
All raw materials (e.g. polypropylene granulates) including input packaging belong to A1.
The means of transport and supplier-specific distances to the manufacturer are provided by DIETZEL GmbH, which are considered under A2. Energy inputs and auxiliaries for production at DIETZEL GmbH as well as production waste treatment belong to A3. The production of packaging materials for products (reuseable pallets, PE-film, steel band) is also part of A3. Since the packaging has a low mass compared to the product weight and the information about transport is limited, a cut-off for the transport of packaging materials to DIETZEL GmbH was conducted. All process data from the manufacturing are provided by DIETZEL GmbH and are attributed to the declared products based on the corresponding length. Production wastes are collected by external partner and treated externally, therefore a cut-off approach is used and only emission from transport is considered.

A4-A5 - Construction stage
The means of transport and client-specific average distances (A4) are provided by DIETZEL GmbH. The use/installation of the product (A5) does not generally result in losses and is manually done. Fastening materials could be used for montage. However, due to the various applications of the conduit, no primary data on installation is available, and no information is provided in PCR Part B as well, therefore these factors are not taken into account in the calculation. The phase of installation (A5) only includes the environmental impacts from the treatment of product packaging waste. The transport of packaging to treatment site is considered with the assumption of 50 km via truck. The packaging materials of the products are assumed to be incinerated by using corresponding datasets. No energy recovery is considered for steel band treatment, which is considered as inert waste incineration, while credits are given for energy recovery from wood and plastic incineration.

C1-C4 – End-of-life stage
Due to the fact that the products have various applications and because of the long lifespan of the product, the data for de-construction is not available. So the data from Table 4 in PCR B is used for calculation in C1. The distance to waste treatment plant (C2) is assumed to be 50 km via truck. At end-of-life stage, 100% of the product is assumed to be incinerated as a worst-case scenario which is listed under C3 with the consideration of energy recovery in module D.

D- Benefits and loads beyond the product system boundary
In module D the credits from incineration of the product packaging in A5 and incineration of products from the end-of-life stage are considered. Datasets ‘RER: Electricity grid mix’ and ‘RER: Process steam from natural gas 95%’ are used for substitution energy (credits).

Power mix
DIETZEL GmbH has its production site in Vienna, Austria. The electricity consumed is modelled based on the share of energy sources provided by the electricity supplier. The “GWP total” value of the electricity mix is 0,376 kg CO_2e/kWh.

Cut-off Rules
All known and available primary data of the production processes, incl. raw materials and auxiliaries were considered. Transport of production waste to incineration plant is excluded due to the insignificance of the impacts. At least 98% of the cumulative environmental impacts are included in the calculation.

Allocation
No allocations are applied in the production stage because there is no co-product.
The benefits of energy recovery from waste incineration in A5 and C3 were allocated to module D. The default values for exported electricity (EEE) and thermal energy (EET) generated from incineration are already included in the selected datasets and considered in the calculation.

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Manufacturing of raw materials	Database	MLC 2025.2, Ecoinvent 3.11	2024	Representative generic datasets	0%
Input transport	Database	MLC 2025.2	2024	Primary data	3%
Manufacturing of products	Collected data	MLC 2025.2	2024	Primary data	3%
Generation of electricity used in production	Supplier specific data	Supplier	2024	Primary data	15%
Manufacturing of product packaging	Database	MLC 2025.2	2024	Representative generic datasets	0%
Total share of primary data, of GWP-GHG results for A1-A3					21%

Summarized, the data quality of the temporal/geographical/technological representativeness can be considered good. For most of the used material and energy inputs/outputs a mapping with appropriate data sets was possible.

Modules declared, geographical scope, share of primary data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Distribution/ installation stage		Use stage							End-of-life stage				Beyond product life cycle
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction 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**
Modules declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	AT	AT	AT	EU 27	EU 27	-	-	-	-	-	-	-	EU 27	EU 27	EU 27	EU 27	EU 27
Share of primary data	21%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	<10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

ENVIRONMENTAL PERFORMANCE

LCA results of the product(s) - main environmental performance results

Mandatory impact category indicators according to EN 15804 + A2

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq.	3,65E-01	1,22E-02	1,15E-02	2,34E-04	6,95E-04	4,04E-01	0,00E+00	-1,95E-01
GWP-fossil	kg CO_2 eq.	3,63E-01	1,22E-02	1,06E-02	2,34E-04	6,94E-04	4,04E-01	0,00E+00	-1,94E-01
GWP-biogenic	kg CO_2 eq.	1,62E-03	1,37E-05	9,08E-04	4,73E-08	7,78E-07	1,21E-05	0,00E+00	-9,19E-04
GWP-luluc	kg CO_2 eq.	1,10E-04	1,21E-06	8,75E-07	2,39E-08	6,86E-08	3,41E-06	0,00E+00	-2,76E-04
ODP	kg CFC 11 eq.	7,15E-11	1,81E-15	2,56E-15	3,47E-12	1,03E-16	2,25E-14	0,00E+00	-1,60E-12
AP	mol H^+ eq.	6,16E-04	1,11E-05	1,61E-06	2,09E-06	6,33E-07	4,06E-05	0,00E+00	-3,25E-04
EP-freshwater	kg P eq.	3,86E-06	2,97E-09	4,20E-10	7,53E-09	1,69E-10	2,74E-09	0,00E+00	-1,76E-07
EP-marine	kg N eq.	1,58E-04	3,55E-06	4,54E-07	9,73E-07	2,02E-07	8,72E-06	0,00E+00	-6,80E-05
EP-terrestrial	mol N eq.	1,71E-03	4,06E-05	7,25E-06	1,06E-05	2,31E-06	1,92E-04	0,00E+00	-7,60E-04
POCP	kg NMVOC eq.	6,01E-04	1,24E-05	1,29E-06	3,18E-06	7,08E-07	2,59E-05	0,00E+00	-1,90E-04
ADP-minerals&metals*	kg Sb eq.	1,83E-07	3,50E-10	2,92E-11	8,34E-11	1,99E-11	2,54E-10	0,00E+00	-1,98E-08
ADP-fossil*	MJ	1,06E+01	1,62E-01	5,66E-03	3,01E-03	9,21E-03	4,74E-02	0,00E+00	-3,41E+00
WDP*	m^3	1,03E-02	3,07E-05	1,13E-03	9,22E-06	1,75E-06	3,72E-02	0,00E+00	-1,42E-02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

** Disclaimer: 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. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.*

Additional mandatory and voluntary impact category indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG[1]	kg CO_2 eq.	3,63E-01	1,22E-02	1,06E-02	2,34E-04	6,94E-04	4,04E-01	0,00E+00	-1,95E-01

Resource use indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	1,21E+00	1,17E-03	1,27E-02	1,92E-05	6,64E-05	1,30E-02	0,00E+00	-1,08E+00
PERM	MJ	1,14E-02	0,00E+00	-1,14E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,22E+00	1,17E-03	1,33E-03	1,92E-05	6,64E-05	1,30E-02	0,00E+00	-1,08E+00
PENRE	MJ	1,06E+01	1,62E-01	1,99E-01	3,01E-03	9,21E-03	5,98E+00	0,00E+00	-9,54E+00
PENRM	MJ	6,13E+00	0,00E+00	-1,93E-01	0,00E+00	0,00E+00	-5,93E+00	0,00E+00	0,00E+00
PENRT	MJ	1,67E+01	1,62E-01	5,66E-03	3,01E-03	9,21E-03	4,74E-02	0,00E+00	-9,54E+00
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
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	1,26E-03	1,27E-06	2,68E-05	2,69E-06	7,21E-08	8,72E-04	0,00E+00	-4,99E-04
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water								

Waste indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	3,48E-04	6,14E-12	2,70E-12	2,69E-06	3,49E-13	2,58E-11	0,00E+00	-2,18E-09
Non-hazardous waste disposed	kg	6,08E-03	1,44E-05	1,08E-03	2,00E-05	8,19E-07	1,60E-03	0,00E+00	-1,79E-03
Radioactive waste disposed	kg	5,10E-05	2,71E-07	1,97E-07	0,00E+00	1,54E-08	2,72E-06	0,00E+00	-2,45E-04

[1] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Output flow indicators

Indicator	Unit	A1-A3	A4	A5	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	0,00E+00	0,00E+00
Material for recycling	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 energy recovery	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 energy, electricity	MJ	0,00E+00	0,00E+00	2,04E-02	0,00E+00	0,00E+00	8,61E-01	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	3,64E-02	0,00E+00	0,00E+00	1,53E+00	0,00E+00	0,00E+00

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
CPC	Central product classification
EN	European Norm (Standard)
EF	Environmental Footprint
EOL	End Of Life
GPI	General Programme Instructions
ISO	International Organization for Standardization
LfE	LCA for Experts
MLC	Managed LCA Content
ND	Not Declared
PCR	Product Category Rules
PE	Polyethylene
PP	Polypropylene
SVHC	Substances of Very High Concern

REFERENCES

General Programme Instructions of International EPD System. Version 5.0.1.

Product Category Rule (PCR) for construction products, version 2.0.1, 2025

EN 15804:2012+A1:2014+A2:2019, Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

MLC Professional Database (Sphera), Version 2025.2

Ecoinvent Database, Version 3.11 with cut-off model

DIN EN ISO 9001: 2015 Quality Management Systems Requirements

DIN EN ISO 14001: 2015 Environmental Management System

VERSION HISTORY

Original Version of the EPD, 2025-12-08

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