

ENVIRONMENTAL PRODUCT DECLARATION

Pliable conduit

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

EPD Owner
Dietzel GmbH

Programme
International EPD System
www.environdec.com

Programme operator
EPD International AB

Registration number
EPD-IES-0027436:001

Approval date
2025-12-08

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2030-12-07

Products included in the EPD:

Pliable conduit

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



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	<input checked="" type="checkbox"/> EPD verification through an individual EPD verification <input type="checkbox"/> EPD verification through EPD Process Certification* <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 Wanzenboeck
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	Pliable conduit
Product identification	Pliable conduit (Polypropylene)
Product description	Pliable conduit can be easily bent and shaped. It is often referred to as a corrugated conduit because its surface is typically corrugated, which provides the conduit with the required flexibility. It's manufactured from polypropylene; it's non-flame propagating, halogen free and low smoke (LSF0H).
Technical purpose of product	<p>Areas of application of pliable conduits:</p> <ul style="list-style-type: none"> • Cavity-wall installations: in plasterboard or dry lining, pliable conduits can be pulled swiftly and easily through cavities. • Concrete and screed: when cables are laid in screed or concrete ceilings, the conduit adapts readily to the structure. • Partition walls and ceilings: for flexible cable routing in suspended ceilings or along convoluted paths.
Manufacturing or service provision description	Polypropylene granulates, colorants, and flame-retardant additives are automatically fed into an extruder, where the polymer is melted and pushed through a specialized ring die. The molten material then enters a corrugator, where forming jaws shape the external corrugated profile by pressing the malleable plastic and applying controlled pressure or vacuum. The profile is progressively cooled in the corrugator and further stabilized in a water tank with spray cooling. Finally, the corrugated pipes are cut to specified lengths and wrapped for shipment.
Material properties	Linear mass density: 0.076 kg/m
Manufacturing site	<p>Dietzel GmbH Dietzel GmbH Austria Vienna 1110</p>
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 pliable 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	0.07	0	0	0
Pigment	0.0008	0	0	0
Flame retardant	0.002	0	0	0
Slip surface	0.0025	0	0	0
Slip agent	0.0008	0	0	0
Total	0.0761	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	0.0026	3	0
Pallet	0.0046	0.6	0.0014
Total	0.0072	3.6	0.0014
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	Pliable conduit Length: 1 m
Conversion factor to mass	0.076
Are infrastructure or capital goods included in any upstream, core or downstream processes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 pliable conduits according to EN 61386-21. The product consists on polypropylene, pigment, flame retardant, slip agent and surface. 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
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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 transport	Database	MLC 2025.2	2024	Primary data	4%
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	12%
Manufacturing of product packaging	Database	MLC 2025.2	2024	Representative generic datasets	
Total share of primary data, of GWP-GHG results for A1-A3					19%
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%

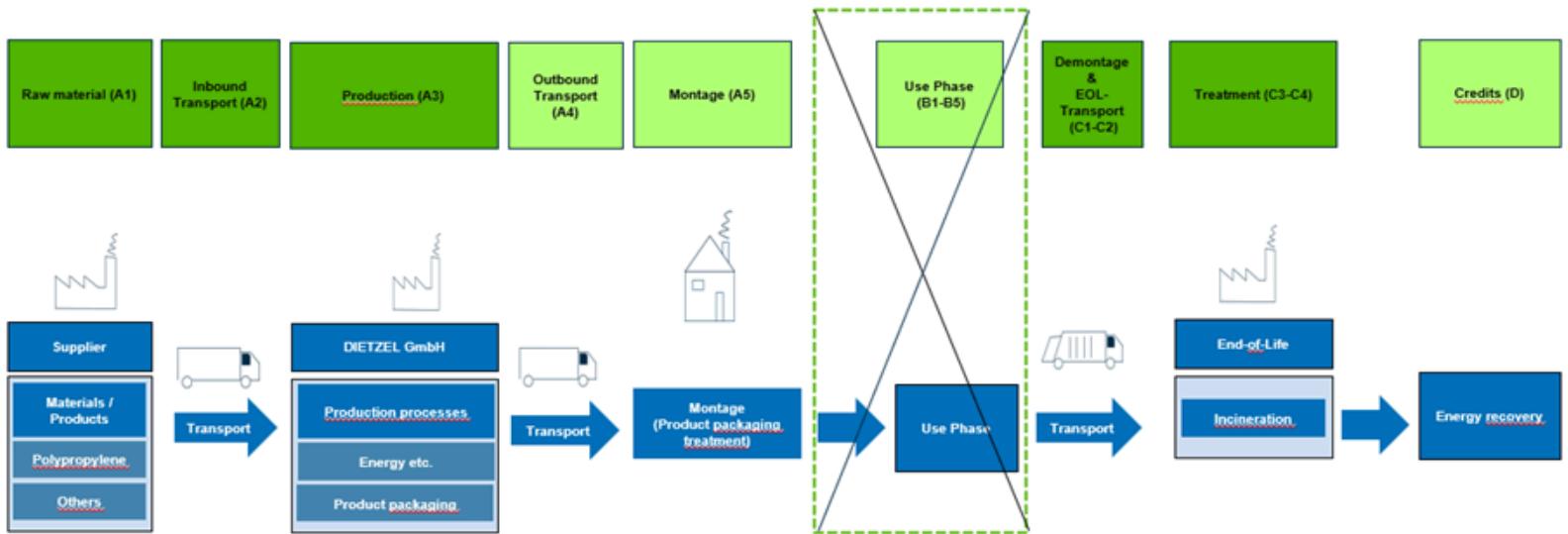
	Oil	0%
	Peat	0%
	Other	6.95%
Climate impact (GWP-GHG):	0.38 kg CO ₂ eq./kWh	

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	
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	19%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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 pliable 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	795	km
Capacity utilization (including empty returns)	55	%
Load capacity	20000-260000	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	0.013	MJ
Thermal energy credits from A5	0.023	MJ
Electricity credits from C3	0.51	MJ
Thermal energy credits from C3	0.90	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.	2.07E-1	6.43E-3	7.18E-3	ND	1.38E-4	4.10E-4	2.38E-1	0.00E+0	-1.16E-1						
Climate change - fossil	GWP-fossil	kg CO ₂ eq.	2.06E-1	6.42E-3	6.45E-3	ND	1.38E-4	4.10E-4	2.38E-1	0.00E+0	-1.15E-1						
Climate change - biogenic	GWP-biogenic	kg CO ₂ eq.	6.14E-4	7.21E-6	7.30E-4	ND	2.79E-8	4.60E-7	7.17E-6	0.00E+0	-5.44E-4						
Climate change - land use and land-use change	GWP-luluc	kg CO ₂ eq.	2.42E-4	6.35E-7	4.83E-7	ND	1.41E-8	4.05E-8	2.02E-6	0.00E+0	-1.63E-4						
Ozone depletion	ODP	kg CFC-11 eq.	2.16E-11	9.53E-16	1.47E-15	ND	2.05E-12	6.07E-17	1.33E-14	0.00E+0	-9.44E-13						
Acidification	AP	mol H ⁺ eq.	3.33E-4	5.86E-6	9.69E-7	ND	1.23E-6	3.74E-7	2.40E-5	0.00E+0	-1.92E-4						
Eutrophication aquatic freshwater	EP-freshwater	kg P eq.	1.30E-6	1.56E-9	2.11E-10	ND	4.45E-9	9.97E-11	1.62E-9	0.00E+0	-1.04E-7						
Eutrophication aquatic marine	EP-marine	kg N eq.	8.55E-5	1.87E-6	2.71E-7	ND	5.74E-7	1.19E-7	5.15E-6	0.00E+0	-4.02E-5						
Eutrophication terrestrial	EP-terrestrial	mol N eq.	9.20E-4	2.14E-5	4.40E-6	ND	6.28E-6	1.36E-6	1.13E-4	0.00E+0	-4.49E-4						
Photochemical ozone formation	POCP	kg NMVOC eq.	3.35E-4	6.56E-6	7.71E-7	ND	1.88E-6	4.18E-7	1.53E-5	0.00E+0	-1.12E-4						
Depletion of abiotic resources - minerals and metals	ADP-minerals&metals ¹	kg Sb eq.	9.47E-8	1.84E-10	1.65E-11	ND	4.92E-11	1.17E-11	1.50E-10	0.00E+0	-1.17E-8						
Depletion of abiotic resources - fossil fuels	ADP-fossil ¹	MJ, net calorific value	6.11E+0	8.52E-2	3.27E-3	ND	1.78E-3	5.44E-3	2.80E-2	0.00E+0	-2.02E+0						
Water use	WDP ¹	m ³ world eq. deprived	4.39E-3	1.62E-5	6.91E-4	ND	5.44E-6	1.03E-6	2.20E-2	0.00E+0	-8.41E-3						
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.	2.07E-1	6.42E-3	6.45E-3	ND	1.38E-4	4.10E-4	2.38E-1	0.00E+0	-1.15E-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	2.88E-9	6.20E-11	1.10E-11	ND	3.48E-11	3.95E-12	1.40E-10	0.00E+0	-1.61E-9						
Ionizing radiation - human health	IRP ¹	kBq U235 eq.	3.27E-3	2.02E-5	1.46E-5	ND	7.65E-7	1.29E-6	2.57E-4	0.00E+0	-1.35E-2						
Eco-toxicity - freshwater	ETP-fw ²	CTUe	3.84E+0	6.31E-2	2.14E-3	ND	9.50E-5	4.03E-3	1.03E-2	0.00E+0	-1.80E-1						
Human toxicity - cancer effects	HTP-c ²	CTUh	7.38E-11	9.67E-13	1.01E-13	ND	1.49E-14	6.17E-14	1.52E-12	0.00E+0	-2.11E-11						
Human toxicity - non-cancer effects	HTP-nc ²	CTUh	1.39E-9	1.58E-11	7.71E-12	ND	2.26E-13	1.01E-12	7.00E-12	0.00E+0	-3.14E-10						
Land-use related impacts/soil quality	SQP ²	Dimensionless	8.28E-1	5.20E-4	7.26E-4	ND	1.18E-4	3.32E-5	8.72E-3	0.00E+0	-4.25E-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	6.31E-1	6.15E-4	9.89E-3	ND	1.13E-5	3.92E-5	7.68E-3	0.00E+0	-6.39E-1						
PERM	MJ, net calorific value	9.14E-3	0.00E+0	-9.14E-3	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0						
PERT	MJ, net calorific value	6.40E-1	6.15E-4	7.46E-4	ND	1.13E-5	3.92E-5	7.68E-3	0.00E+0	-6.39E-1						
PENRE	MJ, net calorific value	6.11E+0	8.52E-2	1.21E-1	ND	1.78E-3	5.44E-3	3.53E+0	0.00E+0	-5.63E+0						
PENRM	MJ, net calorific value	3.62E+0	0.00E+0	-1.18E-1	ND	0.00E+0	0.00E+0	-3.50E+0	0.00E+0	0.00E+0						
PENRT	MJ, net calorific value	9.73E+0	8.52E-2	3.27E-3	ND	1.78E-3	5.44E-3	2.80E-2	0.00E+0	-5.63E+0						
SM	kg	0.00E+0	0.00E+0	0.00E+0	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	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	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0						
FW	m ³	6.88E-4	6.68E-7	1.64E-5	ND	1.27E-7	4.26E-8	5.15E-4	0.00E+0	-2.95E-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	1.06E-4	3.23E-12	1.52E-12	ND	1.59E-6	2.06E-13	1.53E-11	0.00E+0	-1.29E-9						
NHWD	kg	3.40E-3	7.58E-6	5.98E-4	ND	1.18E-5	4.84E-7	9.45E-4	0.00E+0	-1.06E-3						
RWD	kg	3.01E-5	1.43E-7	1.07E-7	ND	0.00E+0	9.09E-9	1.61E-6	0.00E+0	-1.45E-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	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	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	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	1.27E-2	ND	0.00E+0	0.00E+0	5.09E-1	0.00E+0	0.00E+0						
EET	MJ, net calorific value	0.00E+0	0.00E+0	2.28E-2	ND	0.00E+0	0.00E+0	9.04E-1	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.
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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

INTERNATIONAL EPD SYSTEM



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

Pliable 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-0027436:001

Version date:

2025-12-08

Validity date:

2025-12-07



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:
<input checked="" type="checkbox"/> 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:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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

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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: Pliable Conduit

UN CPC code: 36320

Product description: pliable conduit can be easily bent and shaped. It is often referred to as a corrugated conduit because its surface is typically corrugated, which provides the conduit with the required flexibility. It's manufactured from polypropylene; it's non-flame propagating, halogen free and low smoke (LSF0H).

Areas of application of pliable conduits:

- Cavity-wall installations: in plasterboard or dry-lining, pliable conduits can be pulled swiftly and easily through cavities.
- Concrete and screed: when cables are laid in screed or concrete ceilings, the conduit adapts readily to the structure.
- Partition walls and ceilings: for flexible cable routing in suspended ceilings or along convoluted paths.

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.
HFX 16	40	16	23332
HFX 20	58	20	
HFX 25	67	25	
HFX 32	92	32	
HFX 40	115	40	
HFX 50	165	50	
HFXP 16	47	16	33433

HFXP 20	62	20	33432
HFXP 25	83	25	
HFXP 32	110	32	
HFXP 40	145	40	
HFXP 50	190	50	
HFXP PRO 16	60	16	
HFXP PRO 20	72	20	
HFXP PRO 25	95	25	
HFXP PRO 32	140	32	
HFXP PRO 40	160	40	
HFXP PRO 50	215	50	

CONTENT DECLARATION

- The mass (weight) of one unit of a product, as purchased or per declared unit: average weight with 0,076 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	0,07	92,1%	0%	0%	0%
Pigment	0,0008	1,0%	0%	0%	0%
Flame retardant	0,002	2,6%	0%	0%	0%
Slip surface	0,0025	3,3%	0%	0%	0%
Slip agent	0,0008	1,0%	0%	0%	0%
Total	0,076	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	0,0026	3	0
Pallet	0,00046	0,6	0,00014
Total	0,005	3,6	0,00014

- 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

LCA INFORMATION

Declared unit: 1-meter rigid conduit with an average weight of 0,076 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

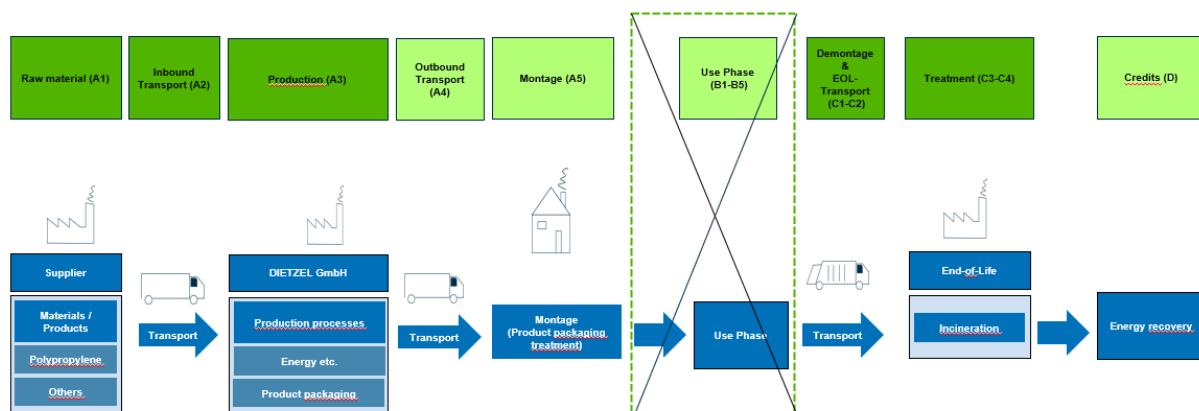
Database(s) and LCA software used: MLC 2025.2, Ecoinvent 3.11 with cut-off model; LfE Software

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) is also part of A3. Since the packaging has a low mass compared to the product weight and the information of 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 CO₂e/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	4%
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	12%
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					19%

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		
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	19%				-	-	-	-	-	-	-	-	-	-	-	-	-	
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.	2,07E-01	6,43E-03	7,18E-03	1,38E-04	4,10E-04	2,38E-01	0,00E+00	-1,16E-01
GWP-fossil	kg CO ₂ eq.	2,06E-01	6,42E-03	6,45E-03	1,38E-04	4,10E-04	2,38E-01	0,00E+00	-1,15E-01
GWP-biogenic	kg CO ₂ eq.	6,14E-04	7,21E-06	7,30E-04	2,79E-08	4,60E-07	7,17E-06	0,00E+00	-5,44E-04
GWP-luluc	kg CO ₂ eq.	2,42E-04	6,35E-07	4,83E-07	1,41E-08	4,05E-08	2,02E-06	0,00E+00	-1,63E-04
ODP	kg CFC 11 eq.	2,16E-11	9,53E-16	1,47E-15	2,05E-12	6,07E-17	1,33E-14	0,00E+00	-9,44E-13
AP	mol H ⁺ eq.	3,33E-04	5,86E-06	9,69E-07	1,23E-06	3,74E-07	2,40E-05	0,00E+00	-1,92E-04
EP-freshwater	kg P eq.	1,30E-06	1,56E-09	2,11E-10	4,45E-09	9,97E-11	1,62E-09	0,00E+00	-1,04E-07
EP-marine	kg N eq.	8,55E-05	1,87E-06	2,71E-07	5,74E-07	1,19E-07	5,15E-06	0,00E+00	-4,02E-05
EP-terrestrial	mol N eq.	9,20E-04	2,14E-05	4,40E-06	6,28E-06	1,36E-06	1,13E-04	0,00E+00	-4,49E-04
POCP	kg NMVOC eq.	3,35E-04	6,56E-06	7,71E-07	1,88E-06	4,18E-07	1,53E-05	0,00E+00	-1,12E-04
ADP-minerals&metals*	kg Sb eq.	9,47E-08	1,84E-10	1,65E-11	4,92E-11	1,17E-11	1,50E-10	0,00E+00	-1,17E-08
ADP-fossil*	MJ	6,11E+00	8,52E-02	3,27E-03	1,78E-03	5,44E-03	2,80E-02	0,00E+00	-2,02E+00
WDP*	m ³	4,39E-03	1,62E-05	6,91E-04	5,44E-06	1,03E-06	2,20E-02	0,00E+00	-8,41E-03
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.	2,07E-01	6,42E-03	6,45E-03	1,38E-04	4,10E-04	2,38E-01	0,00E+00	-1,15E-01

Resource use indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	6,31E-01	6,15E-04	9,89E-03	1,13E-05	3,92E-05	7,68E-03	0,00E+00	-6,39E-01
PERM	MJ	9,14E-03	0,00E+00	-9,14E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	6,40E-01	6,15E-04	7,46E-04	1,13E-05	3,92E-05	7,68E-03	0,00E+00	-6,39E-01
PENRE	MJ	6,11E+00	8,52E-02	1,21E-01	1,78E-03	5,44E-03	3,53E+00	0,00E+00	-5,63E+00
PENRM	MJ	3,62E+00	0,00E+00	-1,18E-01	0,00E+00	0,00E+00	-3,50E+00	0,00E+00	0,00E+00
PENRT	MJ	9,73E+00	8,52E-02	3,27E-03	1,78E-03	5,44E-03	2,80E-02	0,00E+00	-5,63E+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	6,88E-04	6,68E-07	1,64E-05	1,27E-07	4,26E-08	5,15E-04	0,00E+00	-2,95E-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 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								

Waste indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,06E-04	3,23E-12	1,52E-12	1,59E-06	2,06E-13	1,53E-11	0,00E+00	-1,29E-09
Non-hazardous waste disposed	kg	3,40E-03	7,58E-06	5,98E-04	1,18E-05	4,84E-07	9,45E-04	0,00E+00	-1,06E-03
Radioactive waste disposed	kg	3,01E-05	1,43E-07	1,07E-07	0,00E+00	9,09E-09	1,61E-06	0,00E+00	-1,45E-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 CO₂ 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							
Material for recycling	kg	0,00E+00							
Materials for energy recovery	kg	0,00E+00							
Exported energy, electricity	MJ	0,00E+00	0,00E+00	1,27E-02	0,00E+00	0,00E+00	5,09E-01	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	2,28E-02	0,00E+00	0,00E+00	9,04E-01	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 2025.1

Ecoinvent Database, Version 3.10.1

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

