

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	Pipelife Sverige AB
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	
Registration number:	NA
ECO Platform reference number:	NA
Issue date:	22.02.2022
Valid to:	22.02.2027

PP Nordic Pipe

Pipelife Sverige AB

PIPELIFE 

www.epd-norge.no



General information

Product:

PP Nordic Pipe

Program operator:

The Norwegian EPD Foundation
Pb. 5250 Majorstuen, 0303 Oslo
Phone: +47 23 08 80 00
e-mail: post@epd-norge.no

Declaration number:

ECO Platform reference number:

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A1:2013 serves as core PCR
NPCR 019:2018 Part B for Piping systems use in sewage and storm water systems
(under gravity)

Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Declared unit:

1 kg PP Nordic Pipe

Declared unit with option:

A1,A2,A3,A4,A5,C1,C2,C3,C4,D

Functional unit:

The unit is with socket included.

General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Individual third party verification of each EPD is not required when the EPD tool is i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPDNorway, and iii) the process is reviewed annually. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools.

Verification of EPD tool:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

Michael M. Jenssen, Asplan Viak AS

(no signature required)

Owner of the declaration:

Pipelife Sverige AB
Contact person:
Phone: +46 513 22114
e-mail: yvette.lennartsson@pipelife.com

Manufacturer:

Pipelife Sverige AB

Place of production:

Pipelife Sverige AB
Box 50 SE-524 02 Ljung
Sweden

Management system:

EN ISO 9001:2015 and EN ISO 14001:2015

Organisation no:

SE556087042901

Issue date:

22.02.2022

Valid to:

22.02.2027

Year of study:

2022

Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

Development and verification of EPD:

The declaration has been developed and verified using EPD tool lca.tools ver EPD2020.11, developed by LCA.no AS. The EPD tool is integrated into the company's environmental management system, and has been approved by EPD-Norway

Developer of EPD:

Yvette Lennartsson

Reviewer of company-specific input data and EPD:

Mattias Petersson

Approved:

Sign

Håkon Hauan, CEO EPD-Norge

Product

Product description:

Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure made from polypropylene (PP).

Product specification

Conformity mark covered by certificate; Nordic Poly Mark

Materials	kg	%
Polypropylene (PP)	1,00	100,00
Total:	1,00	

Technical data:

PP material with density 905 kg/m³.
Produced according SS EN 1451-1.
Sealing ring quality according EN 681-2.

Market:

Europe, with scenario made for the Swedish market.

Reference service life, product

Lifetime on product calculated more than 100 years.

Reference service life, construction

LCA: Calculation rules

Declared unit:

1 kg PP Nordic Pipe

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

Data quality:

Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.

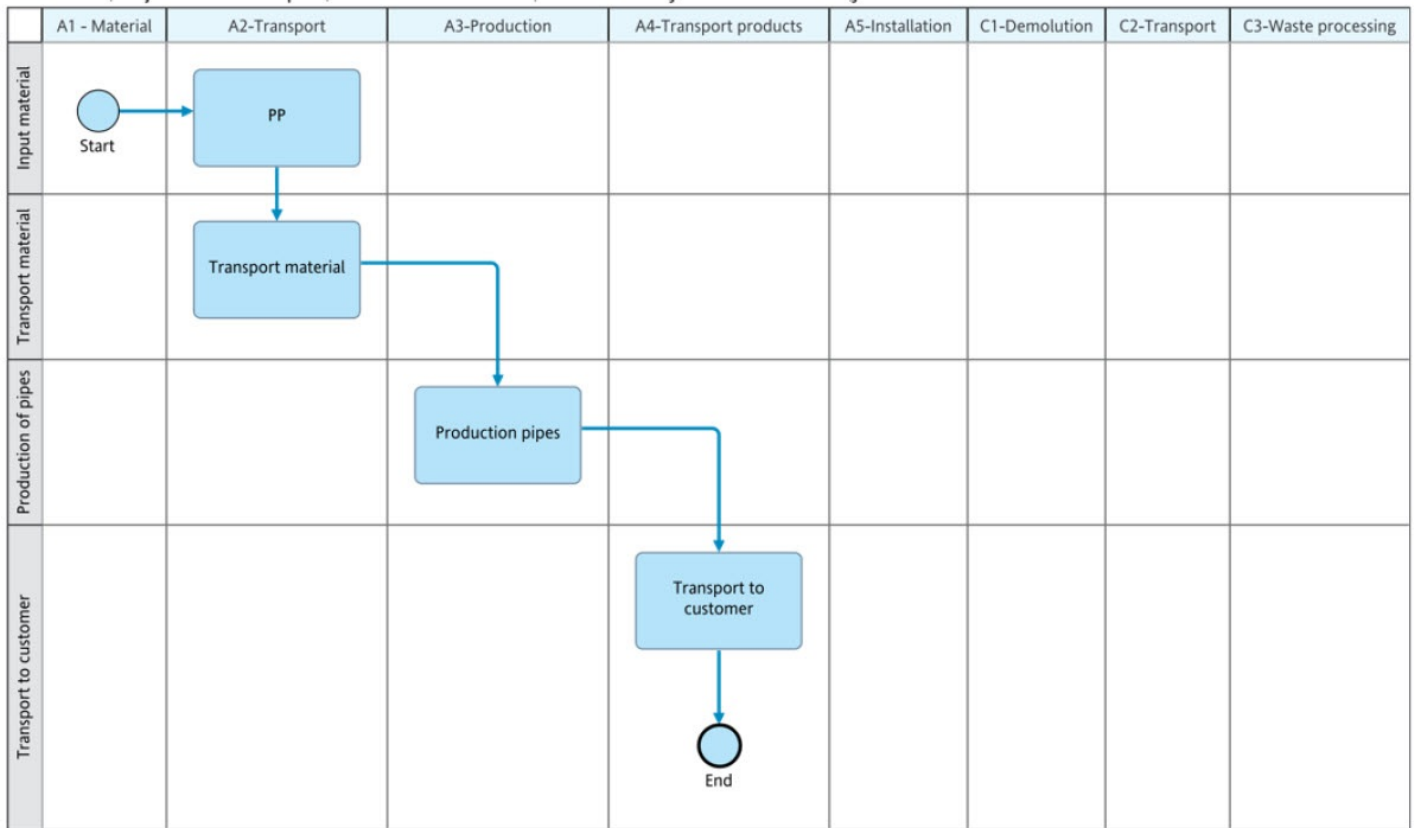
Materials	Source	Data quality	Year
Polypropylene (PP)	ecoinvent 3.5	Database	2018

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

System boundary:

PP Nordic Pipes A1-A4



Material	Material Description	Pipe Length	Weight per meter	Outer dimension	Global warming potential for A1-A3 stages, kg CO2e	Acidification total for A1-A3 stages kg So2e
70005156	PP NORDIC PIPE 50 W SOCKET 0,25M	0,25	0,48	50	2,142	0,006
70005157	PP NORDIC PIPE 50 W SOCKET 0,5m	0,50	0,70	50	2,142	0,006
70005158	PP NORDIC PIPE 50 W SOCKET 1m	1,00	0,43	50	2,142	0,006
70005159	PP NORDIC PIPE 50 W SOCKET 2m	2,00	0,37	50	2,142	0,006
70005160	PP NORDIC PIPE 50 W SOCKET 3m	3,00	0,32	50	2,142	0,006
70005161	PP NORDIC PIPE 75 W SOCKET 0,25m	0,25	0,88	75	2,142	0,006
70005162	PP NORDIC PIPE 75 W SOCKET 0,5m	0,5	0,87	75	2,142	0,006
70005163	PP NORDIC PIPE 75 W SOCKET 1m	1,00	0,79	75	2,142	0,006
70005164	PP NORDIC PIPE 75 W SOCKET 2m	2,00	0,68	75	2,142	0,006
70005165	PP NORDIC PIPE 75 W SOCKET 3m	3,00	0,65	75	2,142	0,006
70005166	PP NORDIC PIPE 110 W SOCKET 0,25m	0,25	2,15	110	2,142	0,006
70005167	PP NORDIC PIPE 110 W SOCKET 0,5m	0,5	1,79	110	2,142	0,006
70005168	PP NORDIC PIPE 110 W SOCKET 1m	1,00	1,39	110	2,142	0,006
70005169	PP NORDIC PIPE 110 W SOCKET 2m	2,00	1,30	110	2,142	0,006
70005170	PP NORDIC PIPE 110 W SOCKET 3m	3,00	1,26	110	2,142	0,006
70005171	PP NORDIC PIPE 110 W SOCKET 5M	5,00	1,28	110	2,142	0,006
70005172	PP NORDIC PIPE 50 W/O SOCKET 3m GE	3,00	0,29	50	2,142	0,006
70005173	PP NORDIC PIPE 75 W/O SOCKET 3m GE	3,00	0,58	75	2,142	0,006
70005174	PP NORDIC PIPE 110 W/O SOCKET 3M	3,00	1,20	110	2,142	0,006
70005175	PP NORDIC PIPE 110 W/O SOCKET 5M	5,00	1,20	110	2,142	0,006

Additional technical information:

Nordic Poly Mark

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

A4 - "Transport", from plant to customer is calculated on a distance of 100 km with truck EURO class 6 and 55% of filling. A5 - "Installation", since the calculation is based on kilo it is not compatible. C - "End of life stage", we assume that the pipes will remain in the ground, therefore no data input. D - "Beyond the system boundaries", we assume that the pipes will remain in the ground, therefore no data input.

Transport from production place to user (A4)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Fuel/Energy consumption	Unit	Value (l/t)
Truck	55,0 %	Lastebil med henger, EURO 6, 55% Fyllingsgrad	100	0,022606	l/tkm	2,26
Railway					l/tkm	
Boat					l/tkm	
Other Transportation					l/tkm	

End of Life (C1, C3, C4)

	Unit	Value
Hazardous waste disposed	kg	
Collected as mixed construction waste	kg	
Reuse	kg	
Recycling	kg	0,3600
Energy recovery	kg	0,6400
To landfill	kg	0,0352

..

Benefits and loads beyond the system boundaries (D)

	Unit	Value
Substitution of electricity, in Norway (MJ)	MJ	3,43
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	23,55
Substitution of PE_PP, granulate (kg)	kg	0,36

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Construction installation stage		User stage							End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

Environmental impact

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP	kg CO ₂ -eq	2,14E+00	8,28E-03	0	0	0	2,04E+00	2,04E-03	-9,21E-01
ODP	kg CFC11 -eq	6,32E-08	1,70E-09	0	0	0	9,97E-09	1,67E-10	-4,95E-08
POCP	kg C ₂ H ₄ -eq	4,59E-04	1,29E-06	0	0	0	1,96E-05	2,33E-07	-4,34E-04
AP	kg SO ₂ -eq	6,85E-03	2,14E-05	0	0	0	4,91E-04	5,15E-06	-3,46E-03
EP	kg PO ₄ ³⁻ -eq	7,25E-04	2,95E-06	0	0	0	1,06E-04	8,76E-07	-4,43E-04
ADPM	kg Sb -eq	7,92E-07	1,97E-08	0	0	0	3,26E-07	2,60E-11	-1,90E-06
ADPE	MJ	6,76E+01	1,36E-01	0	0	0	1,39E+00	1,60E-02	-1,27E+01

GWP Global warming potential; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non fossil resources; ADPE Abiotic depletion potential for fossil resources

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

Resource use

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
RPEE	MJ	2,96E+00	2,47E-03	0	0	0	6,49E-02	1,04E-03	-1,21E+01
RPEM	MJ	0,00E+00	0,00E+00	0	0	0	0,00E+00	0,00E+00	0,00E+00
TPE	MJ	2,96E+00	2,47E-03	0	0	0	6,49E-02	1,04E-03	-1,21E+01
NRPE	MJ	3,19E+01	1,40E-01	0	0	0	1,51E+00	1,74E-02	-1,88E+01
NRPM	MJ	4,64E+01	0,00E+00	0	0	0	0,00E+00	0,00E+00	-1,44E+01
TRPE	MJ	7,83E+01	1,40E-01	0	0	0	1,51E+00	1,74E-02	-3,33E+01
SM	kg	0,00E+00	0,00E+00	0	0	0	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	2,26E-03	0,00E+00	0	0	0	0,00E+00	0,00E+00	-6,75E-04
NRSF	MJ	0,00E+00	0,00E+00	0	0	0	0,00E+00	0,00E+00	0,00E+00
W	m ³	6,55E-03	3,32E-05	0	0	0	7,41E-04	1,70E-05	-3,13E-03

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

End of life - Waste

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HW	kg	3,04E-06	7,47E-08	0	0	0	2,40E-06	2,01E-08	-5,94E-06
NHW	kg	2,19E-01	1,28E-02	0	0	0	8,65E-02	4,64E-02	-1,40E-01
RW	kg	INA*	INA*	0	0	0	INA*	INA*	INA*

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

End of life - Output flow

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
CR	kg	0,00E+00	0,00E+00	0	0	0	0,00E+00	0,00E+00	0,00E+00
MR	kg	1,28E-02	0,00E+00	0	0	0	3,22E-01	0,00E+00	0,00E+00
MER	kg	5,04E-06	0,00E+00	0	0	0	1,81E-02	0,00E+00	0,00E+00
EEE	MJ	INA*	INA*	0	0	0	INA*	INA*	INA*
ETE	MJ	INA*	INA*	0	0	0	INA*	INA*	INA*

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

Additional requirements

Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Data source	Amount	Unit
El-mix, Sweden (kWh)	ecoinvent 3.4 Alloc Rec	42,67	g CO ₂ -ekv/kWh




Dangerous substances

The product contains no substances given by the REACH Candidate list or the national priority list.

Indoor environment

Bibliography

- ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
 ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.
 EN 15804:2012+A1:2013 Environmental product declaration - Core rules for the product category of construction products.
 ISO 21930:2017 Core rules for environmental product declarations of construction products.
 ecoinvent v3, Allocation, cut-off by classification, Swiss Centre of Life Cycle Inventories.
 Iversen et al., (2018) eEPD v3.0 - Background information for EPD generator system. LCA.no report 04.18.
 Vold, et al., (2019) EPD generator for Pipelife - Background information for customer application and LCA data. report number 08.19
 NPCR Part A: Construction products and services. Ver. 1.0. April 2017, EPD-Norge.
 NPCR 019 Part B for Piping systems for use in sewage and storm water systems (under gravity), Ver 2.0.

	Program operator and publisher The Norwegian EPD Foundation Post Box 5250 Majorstuen, 0303 Oslo, Norway	Phone: +47 23 08 80 00 e-mail: post@epd-norge.no web: www.epd-norge.no
	Owner of the declaration Pipelife Sverige AB Box 50 SE-524 02 Ljung	Phone: +46 513 22114 e-mail: yvette.lennartsson@pipelife.com web:
	Author of the Life Cycle Assessment LCA.no AS Dokka 1C 1671 Kråkerøy	Phone: +47 916 50 916 e-mail: post@lca.no web: www.lca.no
	Developer of EPD generator LCA.no AS Dokka 1C,1671 Kråkerøy	Phone: +47 916 50 916 e-mail: post@lca.no web: www.lca.no