

# 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:                    |                              |
| Valid to:                      |                              |

Pragma Sewage pipe SN8 6m

Pipelife Sverige AB



[www.epd-norge.no](http://www.epd-norge.no)



## General information

### Product:

Pragma Sewage pipe SN8 6m

### Program operator:

The Norwegian EPD Foundation  
Pb. 5250 Majorstuen, 0303 Oslo  
Phone: +47 23 08 80 00  
e-mail: [post@epd-norge.no](mailto: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 Pragma Sewage pipe SN8 6m

### Declared unit with option:

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

### Functional unit:

The unit is with socket included (one socket/6m)

### 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](mailto: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:

### Valid to:

### Year of study:

2021

### 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:

Ove Soderberg

### Approved:

Sign



Håkon Hauan, CEO EPD-Norge

## Product

### Product description:

### Product specification

Conformity mark covered by certificate; Nordic Poly Mark

| Materials          | kg   | %     |
|--------------------|------|-------|
| Rubber, synthetic  | 0,03 | 3,51  |
| Polypropylene (PP) | 0,88 | 96,49 |
| Total:             | 0,92 |       |

| Packaging                 | kg   |  |
|---------------------------|------|--|
| Packaging                 | 0,08 |  |
| Total including packaging | 1    |  |

### Technical data:

PP material with density 905 kg/m<sup>3</sup>.  
Produced according EN 13476:2007.  
Sealing ring quality according EN 681-1.

### 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 Pragma Sewage pipe SN8 6m

### 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.

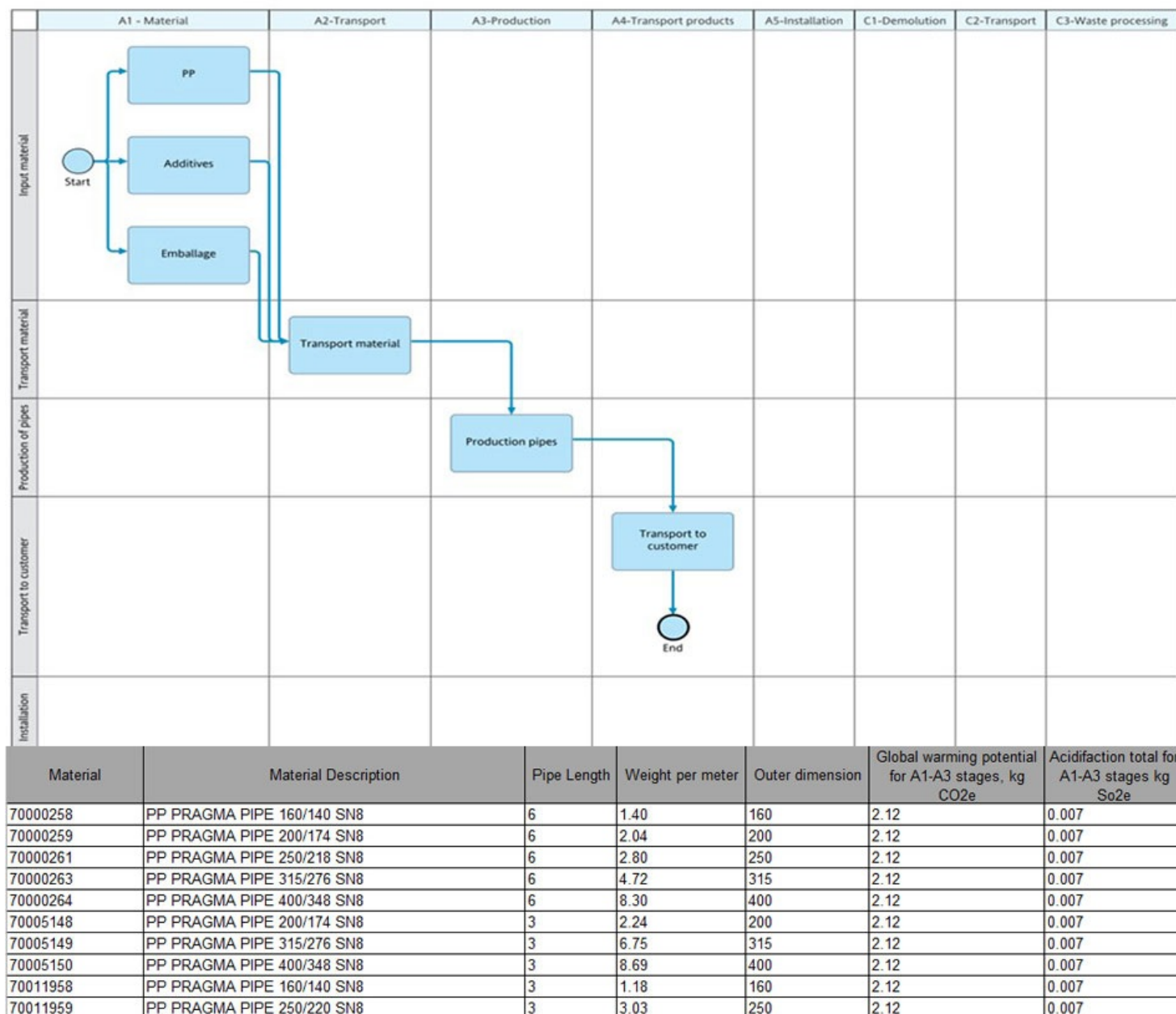
| Materials          | Source        | Data quality | Year |
|--------------------|---------------|--------------|------|
| Packaging          | ecoinvent 3.5 | Database     | 2018 |
| Polypropylene (PP) | ecoinvent 3.5 | Database     | 2018 |
| Rubber, synthetic  | ecoinvent 3.5 | Database     | 2018 |

### 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:

## EPD process Pragma A1-A4



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" and D "Beyond the system boundaries - D".We assume that the pipes will remain in the ground, therefore no data input.

Transport from production place to user (A4)

| Type                 | Capacity utilisation<br>(incl. return) % | Type of vehicle  | Distance km | Fuel/Energy<br>consumption | Unit  | Value (l/t) |
|----------------------|--|--|-------------|----------------------------|-------|-------------|
| Truck                | 55,0 %                                   | Truck with trailer, EURO 6, 55% degree of<br>filling by weight | 100         | 0,022606                   | l/tkm | 2,26        |
| Railway              |  |  |             |                            | l/tkm |             |
| Boat                 |  |  |             |                            | l/tkm |             |
| Other Transportation |  |  |             |                            | l/tkm |             |

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## 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 |           |               |           |          | 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 <sub>2</sub> -eq               | 2,12E+00 | 8,28E-03 | 0  | 0  | 0  | 0  | 0  | 0 |
| ODP       | kg CFC11 -eq                         | 8,96E-08 | 1,70E-09 | 0  | 0  | 0  | 0  | 0  | 0 |
| POCP      | kg C <sub>2</sub> H <sub>4</sub> -eq | 4,79E-04 | 1,29E-06 | 0  | 0  | 0  | 0  | 0  | 0 |
| AP        | kg SO <sub>2</sub> -eq               | 7,05E-03 | 2,14E-05 | 0  | 0  | 0  | 0  | 0  | 0 |
| EP        | kg PO <sub>4</sub> <sup>3-</sup> -eq | 7,52E-04 | 2,95E-06 | 0  | 0  | 0  | 0  | 0  | 0 |
| ADPM      | kg Sb -eq                            | 3,94E-06 | 1,97E-08 | 0  | 0  | 0  | 0  | 0  | 0 |
| ADPE      | MJ                                   | 6,37E+01 | 1,36E-01 | 0  | 0  | 0  | 0  | 0  | 0 |

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<sup>-3</sup> = 0,009"

\*INA Indicator Not Assessed

## Resource use

| Parameter | Unit           | A1-A3    | A4       | A5 | C1 | C2 | C3 | C4 | D |
|-----------|----------------|----------|----------|----|----|----|----|----|---|
| RPEE      | MJ             | 4,12E+00 | 2,47E-03 | 0  | 0  | 0  | 0  | 0  | 0 |
| RPEM      | MJ             | 1,20E+00 | 0,00E+00 | 0  | 0  | 0  | 0  | 0  | 0 |
| TPE       | MJ             | 5,32E+00 | 2,47E-03 | 0  | 0  | 0  | 0  | 0  | 0 |
| NRPE      | MJ             | 3,25E+01 | 1,40E-01 | 0  | 0  | 0  | 0  | 0  | 0 |
| NRPM      | MJ             | 4,20E+01 | 0,00E+00 | 0  | 0  | 0  | 0  | 0  | 0 |
| TRPE      | MJ             | 7,45E+01 | 1,40E-01 | 0  | 0  | 0  | 0  | 0  | 0 |
| SM        | kg             | 0,00E+00 | 0,00E+00 | 0  | 0  | 0  | 0  | 0  | 0 |
| RSF       | MJ             | 2,26E-03 | 0,00E+00 | 0  | 0  | 0  | 0  | 0  | 0 |
| NRSF      | MJ             | 0,00E+00 | 0,00E+00 | 0  | 0  | 0  | 0  | 0  | 0 |
| W         | m <sup>3</sup> | 2,74E-01 | 3,32E-05 | 0  | 0  | 0  | 0  | 0  | 0 |

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<sup>-3</sup> = 0,009"

\*INA Indicator Not Assessed

## End of life - Waste

| Parameter | Unit | A1-A3    | A4       | A5 | C1 | C2 | C3 | C4 | D |
|-----------|------|----------|----------|----|----|----|----|----|---|
| HW        | kg   | 8,08E-06 | 7,47E-08 | 0  | 0  | 0  | 0  | 0  | 0 |
| NHW       | kg   | 2,86E-01 | 1,28E-02 | 0  | 0  | 0  | 0  | 0  | 0 |
| RW        | kg   | INA*     | INA*     | 0  | 0  | 0  | 0  | 0  | 0 |

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

"Reading example: 9,0 E-03 = 9,0\*10<sup>-3</sup> = 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  | 0  | 0 |
| MR        | kg   | 3,72E-02 | 0,00E+00 | 0  | 0  | 0  | 0  | 0  | 0 |
| MER       | kg   | 3,02E-05 | 0,00E+00 | 0  | 0  | 0  | 0  | 0  | 0 |
| EEE       | MJ   | INA*     | INA*     | 0  | 0  | 0  | 0  | 0  | 0 |
| ETE       | MJ   | INA*     | INA*     | 0  | 0  | 0  | 0  | 0  | 0 |

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<sup>-3</sup> = 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 CO2-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.  
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 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.

|   |  |  |  |
|---|--|--|--|
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