ENGINEERING TOMORROW

# Environmental **Product Declaration**

## DEVIpipeguard 10,25,33, DEVIpipeguard 30,60 Industry, DEVIiceguard & DEVIhotwatt 45,55,70 heating cables


| | |
|---|---|
| **EPD issued** | 2024-02-19 |
| **EPD expires** | 2029-02-19 |
| **EPD author** | Danfoss Climate Solutions A/S |
| **EPD type** | Cradle-to-gate with options (A4, A5, C1-C4 & D) |
| **Declared unit** | 1 m of cable with packaging |
| **Products included** | DEVIpipeguard, DEVIiceguard & DEVIhotwatt (calculation made for sales code: 140F8500, sales codes presented in Annex 1) |
| **Manufacturing Location** | Bartec, Germany |
| **Use Location** | Norway |
| **Application** | Multiple indoor floor constructions and pipe tracing applications |
| **Mass** | 117,4 g without packaging<br>133,4 g with packaging |
| **Dimensions (H×W×D)** | 1 m |
| **Verification** | [ ] External [X] Internal [ ] None |
| **Produced to** | Danfoss Product Category Rules (2022-09) |
| **Internal independent verifier** | Danfoss Power Electronics & Drives A/S |

**DISCLAIMER**
This EPD was prepared to the best of knowledge of Danfoss A/S. The life cycle assessment calculations were performed in accordance with ISO 14040 & 14044 and EN15804+A2.
All results were internally reviewed by independent experts. While this declaration has followed the guidance of ISO 14025, it has not been externally verified or registered by an EPD programme and therefore does not fully comply with the ISO 14025 standard.
This EPD has been published by Danfoss A/S on Danfoss Product Store and Danfoss Website. For questions, feedback or requests please contact your Danfoss sales representative.

## Introduction

This Environmental Product Declaration (EPD) follows the Danfoss Product Category Rules (PCR) (2022-09-20). These rules provide a consistent framework for calculating and reporting the environmental performance of Danfoss' products and is aligned with relevant international standards, particularly ISO 14025:2006 and EN 15804+A2:2019.

This document has been produced by Danfoss A/S following an internal verification process, but it is not a third-party verified document.

## What is an EPD?

An EPD is a document used to communicate transparently, the quantified environmental impacts of a product over its lifecycle stages. This quantification is done by performing a Life Cycle Assessment (LCA) in line with a consistent set of rules known as a PCR (Product Category Rules).

An EPD provides:

- A product's carbon footprint together with other relevant environmental indicators, including air pollution, water use, energy consumption and waste, over its own life cycle (Modules A-C), as well as the expected benefits of reuse and recycling in reducing the impact of future products (Module D). See Table 1 for module descriptions.
- Environmental data allowing customers to calculate LCAs and produce EPDs for their own products.

## Type of EPD

This EPD is of the type 'cradle-to-gate with options' and includes all relevant modules: production (A1-A3), shipping (A4), deconstruction (C1), waste collection and transport (C2), treatment (C3) and disposal (C4). It also includes potential net benefits to future products from recycling or reusing post-consumer waste (D). The codes in brackets are the module labels from EN 15804+A2. Module for installation and models concerning use, maintenance, repair, replacement, refurbishment, energy and operational water use (B7) are excluded, following the cut-off rules from EN 15804.

**Table 1:** Modules of the product's life cycle included in the EPD

| Product stage | | | Installation | | Use stage | | | | | | | End-of-life stage | | | | Benefits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Raw materials | Transport | Manufacture | Transport | Installation | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-install. | Transport | Waste processing | Disposal | Benefits and loads outside system boundaries |
| **A1** | **A2** | **A3** | **A4** | **A5** | B1 | B2 | B3 | B4 | B5 | B6 | B7 | **C1** | **C2** | **C3** | **C4** | **D** |
| **X** | **X** | **X** | **X** | X | MNR | MNR | MNR | MNR | MNR | MNR | MNR | **X** | **X** | **X** | **X** | **X** |

(X = declared module; MNR = module not relevant)

## Overview of LCA study

The DEVIpipeguard 10,25,33 and DEVIpipeguard 30,60 Industry are self-limiting heating cables that are used for frost protection of pipes.

Heating cable must be used together with an appropriate thermostat to secure against overheating and reduce energy consumption.

The DEVIpipeguard 10,25,33 and DEVIpipeguard 30,60 Industry are heating cable developed for being installed on pipes with the purpose of preventing frozen pipes.

The heating cable is supplied on drums.

See more information about DEVIpipeguard 10,25,33 and DEVIpipeguard 30,60 Industry on Danfoss product store.


**Figure 1: DEVIpipeguard 30,60 Industry & DEVIpipeguard 10,25,33 heating cables**

The DEVIhotwatt 45,55,70 is a self-limiting heating cable that is used for domestic hot water applications.

Heating cable must be used together with an appropriate thermostat to secure against overheating and reduce energy consumption.

The DEVIhotwatt 45,55,70 is a heating cable developed for being installed on pipes with the purpose of preventing legionella and maintaining specific temp. in pipes.

The heating cable is supplied on drums.

See more information about DEVIhotwatt 45,55,70 on Danfoss product store.

**Figure 2: DEVIhotwatt 45,55,70**

## Overview of LCA study

The DEVIiceguard™ is a self-limiting parallel heating cable that is used for ice and snow melting on roofs and in gutters and downpipes.

Heating cable must be used together with an appropriate thermostat to secure against overheating and reduce energy consumption.

The heating cable is supplied on drums.

See more information about DEVIiceguard 18 on Danfoss product store.

**Figure 2: DEVIhotwatt 45,55,70**

### Intended market.

The intended market of this study is Norway, and the baseline scenario involves the distribution, installation, and end-of-life in Norway. The results are only valid for this geographical scope.

**Table 2:** Product composition

| **Material** | **Net weight** | **Unit** | **%** |
|---|---|---|---|
| ETFE | 19,9 | g | 27% |
| Masterbatch PE | 0,5 | g | 5% |
| Wire Cu | 52,0 | g | 22% |
| PP | 45,1 | g | 23% |
| **Total product** | **117,4** | **g** | **100%** |
| Cardboard | 15,7 | g | 98% |
| PS | 0,3 | g | 2% |
| **Total packaging** | **16,0** | **g** | **100%** |
| Product | 117,4 | g | 79% |
| Packaging | 16,0 | g | 21% |
| **Total product & packaging** | **133,4** | **g** | **100%** |

## Overview of LCA study

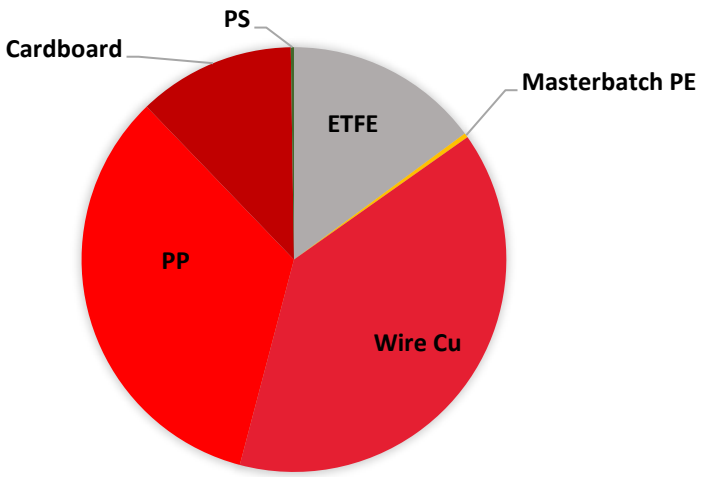


**Figure 3:** Material Composition Overview

The declared unit is 1 m of cable with packaging, with the mass of 133,4 g

This EPD covers multiple sales codes for DEVIpipeguard, 30,60 Industry heating cables, DEVIpipeguard 10,25,33 heating cables & DEVIhotwatt 45,55,70 heating cables. A product comparison on the material level was performed for all codes, the code with the highest mass of heating wire was selected. The EPD values were calculated for the composition above (sales code: 140F8500). This composition represents the highest environmental values for all the product codes in DEVIpipeguard 30,60 Industry heating cables, therefore it represents all the products in the DEVIpipeguard 30,60 Industry heating cables product group. All sales codes covered by this EPD are shown in tables 13 & 14.

### Data quality

Data quality of the selected datasets is generally assessed as good and very good in terms of geographical, time and technology representativeness and applicability. Background data is from LCA software LCA for experts (Sphera) database version 2023.2.

### Allocation and cut-off criteria

The allocation is made in accordance with the provisions of EN 15804+A2. All major raw materials and all the essential energy are included. All hazardous materials and substances are considered in the inventory. Data sets within the system boundary are complete and fulfil the criteria for the exclusion of inputs and output criteria. No known material or energy flows were ignored, including those which fell below the limit of 1%. Accordingly, the total sum of input flows ignored is certainly less than 5% of the energy and mass applied.

LPDE was used to represent ETFE in the LCA study PP was used to represent PE/PP copolymer.

Accordingly, the total sum of input flows ignored is certainly less than 5% of the energy and mass applied.

### System boundaries

The results in this EPD are split into life cycle modules following EN 15804 (Figure 1): production (A1-A3), distribution (A4), (A5) installation and the end of the product's life (C1-C4). Module D represents

## Overview of LCA study

environmental benefits and loads that occur beyond the system boundary (i.e., in future products).

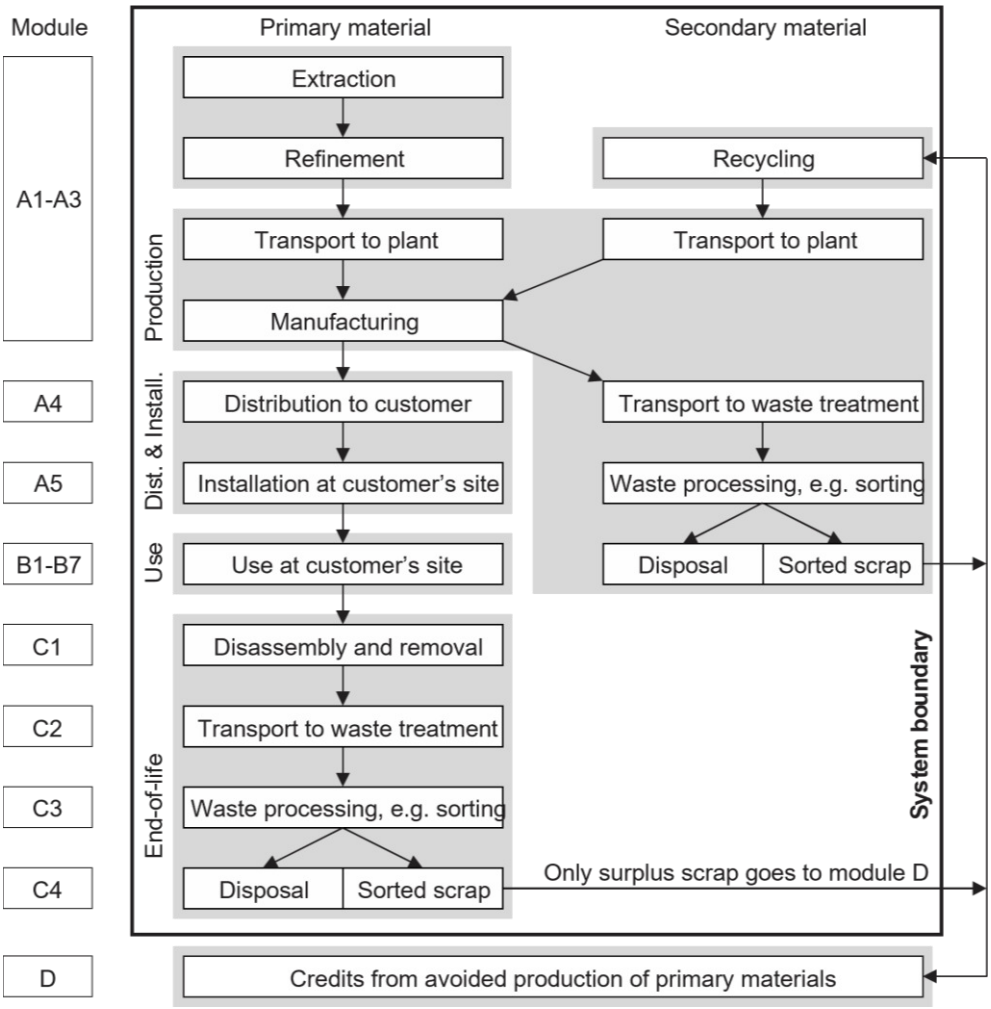


**Figure 4:** Modular structure used in this EPD (following EN 15804+A2)

## Overview of LCA study

### Product and packaging manufacture (A1-A3)

Final manufacturing occurs in the Bartec plant, Germany (outsourced). The raw materials are mainly sourced from Europe. Electricity is used to press the heating metal core together with the outside shell. The product is then cut to desired length and shipped to the costumer. The facility is certified according to ISO 9001 & ISO 14001. Where waste generated on-site is recyclable, it is separated and recycled. For further information, see here. Data collected for year 2023.

**Table 4:** Biogenic carbon content in product

| | Total (excluding recycling) |
|---|---|
| Biogenic carbon content in product [kg] | 6,74E-03 |

*Note: 1 kg biogenic carbon is equivalent to 44/12 kg of $CO_2$.*

### Shipping and installation (A4-A5)

The intended market for DEVIpipeguard 30,60 Industry heating cables is Norway. The assembly factory is in Germany, so a distance of 1404 km by truck and 163 km by container ship (representing a ferry) was used to represent the distance between the factory and the final customer.

Module A5 includes disposal of packaging materials only, the benefits from e.g., energy recovered after plastic incineration are allocated to module D. The product is assumed to be installed by hand and there is no loss of product during installation. Energy use in handheld tools during installation is not included as it falls under the cut-off criteria.

### End-of-life (C1-C4)

The following end-of-life procedure has been applied:

- Manual dismantling is used to separate recyclable bulk materials, e.g. bulk metals and plastics.
- Shredding is used for the remaining parts, such as printed circuit board assemblies.
- Ferrous metals, non-ferrous metals and bulk plastics are recovered through recycling.
- The remaining materials go to either energy recovery or landfill.

In line with EN 15804+A2, only the 'net scrap' (i.e., the leftover recyclable materials remaining after inputs of recycled content required in the manufacturing phase are first satisfied) is used to calculate the benefits and loads beyond the system boundary (Module D).

For this EPD an average scenario with 50% of the product sent to recycling % 50% of the product sent to landfill (C3, C4, D) was used.

This scenario is designed to represent an average end-of-life scenario.

For the EPD this average scenario was chosen as it is assumed that it represents the majority of cases on average.

## Overview of LCA study

1. Recycling scenario with 100% of the product sent to recycling at the end-of-life, excluding fractions that cannot be recycled or incinerated (e.g., glass reinforcing in glass-filled plastics) and are sent to landfill.

This scenario illustrates best-case performance. It assumes a 100% collection rate and the best available recycling technologies. Under this scenario, electrical cables, and all metals, flat glass and unreinforced plastics found within the body and chassis of the product are recycled. Printed circuit board assemblies are incinerated, and the copper and precious metals (gold, silver, palladium, and platinum) are recycled.

2. Landfill scenario with 100% of the product sent to landfill.

This scenario assumes that the whole product, including its packaging, is landfilled. It is designed to represent a poor end-of-life route where valuable resources are lost.

### Benefits and loads beyond the system boundary (D)

Module D considers the net benefit of recycling (including energy recovery) of materials in the product and packaging, taking into account losses in the recycling process and the recycled material used in the production of the product. Module D covers the two end-of-life scenarios, as described above.

## Environmental performance

This section presents the environmental performance of 1 m of DEVIpipeguard 30,60 Industry heating cable without packaging. Figure 5 presents the environmental impact of 1m of DEVIpipeguard 30,60 Industry 3 heating cable without packaging across a number of environmental impact categories (following EN 15804+A2:2019) per life cycle stage, over its full life cycle, including Global Warming Potential.

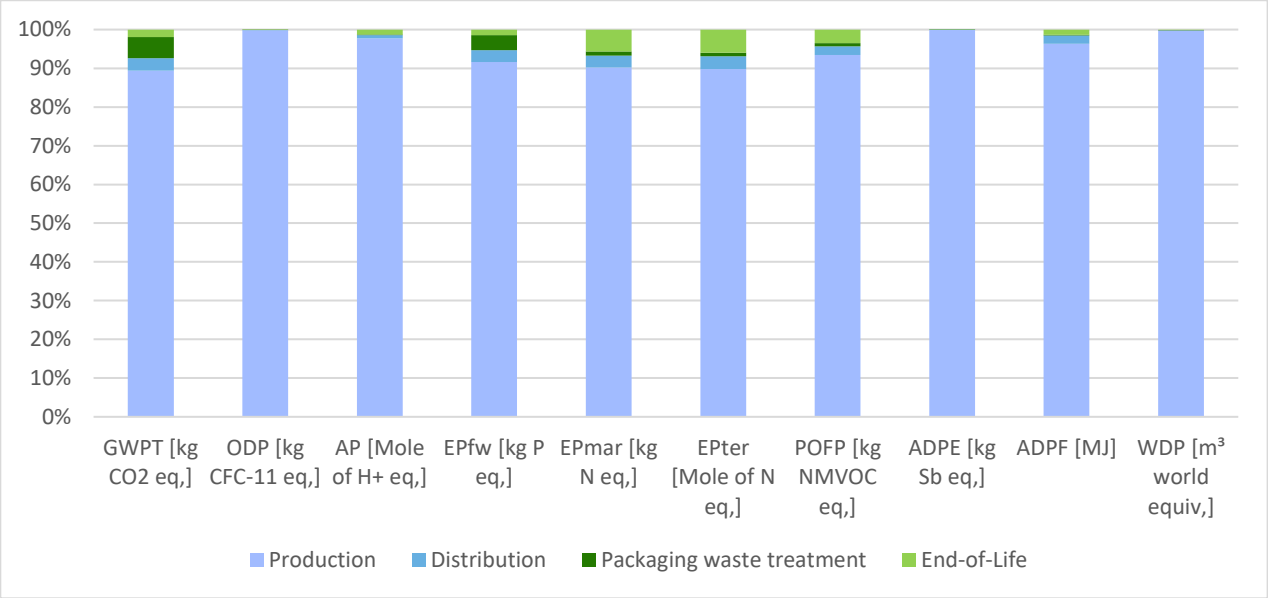


**Figure 5:** Breakdown of environmental impacts by life cycle stages (see Table 7 for descriptions of environmental impact indicators).

**Table 5:** Environmental impact indicators

| | Production | Distribution | Packaging waste treatment | End-of-Life | | | | (not included in Figure 5) |
|---|---|---|---|---|---|---|---|---|
| **Life cycle stages based on EN 15804+A2** | **A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| **Description** / **Environmental Impact Indicators** | Manufacture of the product from 'cradle-to-gate' | Transport of the product to the customer | Installation of the product and disposal of used packaging | Deinstallation of the product from the site | Transport of the product to waste treatment | Processing waste for recycling | Disposal of waste that cannot be recycled (through landfill and incineration) | Potential benefits and loads beyond the system boundary due to reuse, recycling, and energy recovery |
| GWPT [kg CO2 eq.] | 4,34E-01 | 1,56E-02 | 2,63E-02 | 0,00E00 | 1,20E-03 | 6,71E-03 | 1,54E-03 | -2,08E-01 |
| GWPF [kg CO2 eq.] | 4,58E-01 | 1,55E-02 | 1,54E-03 | 0,00E00 | 1,20E-03 | 6,65E-03 | 1,54E-03 | -2,08E-01 |
| GWPB [kg CO2 eq.] | -2,47E-02 | 0,00E+00 | 2,47E-02 | 0,00E00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| GWPLULUC [kg CO2 eq.] | 9,58E-04 | 1,40E-04 | 1,56E-06 | 0,00E00 | 2,89E-08 | 6,10E-05 | 2,76E-06 | -7,60E-04 |
| ODP [kg CFC-11 eq.] | 2,74E-12 | 1,99E-15 | 1,03E-15 | 0,00E00 | 1,40E-19 | 8,55E-16 | 2,25E-15 | -8,75E-13 |
| AP [Mole of H+ eq.] | 4,21E-03 | 3,75E-05 | 8,19E-06 | 0,00E00 | 1,64E-06 | 4,15E-05 | 1,02E-05 | -3,88E-03 |
| EPfw [kg P eq.] | 1,66E-06 | 5,54E-08 | 6,93E-08 | 0,00E00 | 2,59E-10 | 2,41E-08 | 1,92E-09 | -3,78E-07 |
| EPmar [kg N eq.] | 3,89E-04 | 1,31E-05 | 4,42E-06 | 0,00E00 | 6,53E-07 | 2,03E-05 | 3,58E-06 | -2,07E-04 |
| EPter [Mole of N eq.] | 4,07E-03 | 1,49E-04 | 4,03E-05 | 0,00E00 | 7,20E-06 | 2,25E-04 | 3,94E-05 | -2,15E-03 |
| POFP [kg NMVOC eq.] | 1,30E-03 | 3,14E-05 | 1,11E-05 | 0,00E00 | 1,56E-06 | 3,85E-05 | 8,60E-06 | -7,35E-04 |
| ADPE [kg Sb eq.] | 1,64E-04 | 9,99E-10 | 7,89E-11 | 0,00E00 | 4,26E-11 | 4,34E-10 | 6,40E-11 | -1,76E-04 |
| ADPF [MJ] | 9,39E+00 | 2,10E-01 | 2,09E-02 | 0,00E00 | 1,73E-02 | 9,00E-02 | 2,13E-02 | -2,11E+00 |
| WDP [$m^3$ world equiv.] | 1,73E-01 | 1,83E-04 | 9,43E-05 | 0,00E00 | 2,02E-06 | 7,95E-05 | 9,80E-05 | -1,38E-01 |

**Table 6:** GWPT-GHG indicator

| | Production | Distribution | Packaging waste treatment | End-of-Life | | | | |
|---|---|---|---|---|---|---|---|---|
| **Life cycle stages based on EN 15804+A2** | **A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| **Description** / **Environmental Impact Indicators** | Manufacture of the product from 'cradle-to-gate' | Transport of the product to the customer | Installation of the product and disposal of used packaging | Deinstallation of the product from the site | Transport of the product to waste treatment | Processing waste for recycling | Disposal of waste that cannot be recycled (through landfill and incineration) | Potential benefits and loads beyond the system boundary due to reuse, recycling, and energy recovery |
| GWP-GHG [kg CO2 eq.] | 4,59E-01 | 1,56E-02 | 1,54E-03 | 0,00E+00 | 1,20E-03 | 6,71E-03 | 1,54E-03 | -2,08E-01 |

*the GWP-GHG environmental indicator is calculated without the biogenic global warming potential (GWPB), the formula is GWP-GHG = GWPF + GWPLULUC

How to read scientific numbers:

e.g. 2,05E02 = 2,05 x $10^{2}$ = 205

2,04E-01 = 2,04 x $10^{-1}$ = 0,204

**Table 7:** Environmental impact indicator descriptions

| Acronym | Unit | Indicator |
|---|---|---|
| GWPT | kg $CO_2$ eq. | Carbon footprint (Global Warming Potential) – total |
| GWPF | kg $CO_2$ eq. | Carbon footprint (Global Warming Potential) – fossil |
| GWPB | kg $CO_2$ eq. | Carbon footprint (Global Warming Potential) – biogenic |
| GWPLULUC | kg $CO_2$ eq. | Carbon footprint (Global Warming Potential) – land use and land use change |
| GWP-GHG | kg $CO_2$ eq. | Carbon footprint (Global Warming Potential) – total without Carbon footprint (Global Warming Potential) – biogenic |
| ODP | kg CFC-11 eq. | Depletion potential of the stratospheric ozone layer |
| AP | Mole H+ eq. | Acidification potential |
| EPfw | kg P eq. | Eutrophication potential – aquatic freshwater |
| EPmar | kg N eq. | Eutrophication potential – aquatic marine |
| EPter | Mole of N eq. | Eutrophication potential – terrestrial |
| POFP | kg NMVOC eq. | Summer smog (photochemical ozone formation potential) |
| ADPE* | kg Sb eq. | Depletion of abiotic resources – minerals and metals |
| ADPF* | MJ | Depletion of abiotic resources – fossil fuels |
| WDP* | $m^3$ world eq. | Water deprivation potential (deprivation-weighted water consumption) |

Results for module A1-A3 are specific to the product. All results from module A4 onwards should be considered as scenarios that represent one possible outcome. The true environmental performance of the product will depend on actual use.

The results in this section are relative expressions only and do not predict actual impacts, the exceeding of thresholds, safety margins, or risks. EPDs from others may not be comparable.

### Carbon footprint

The total carbon footprint (GWPT), cradle-to-grave, of the product is 4,84E-01 kg CO2-eq (A1-C4). The carbon footprint (GWPT) of production of this product, cradle-to-gate, is 4,34E-01 kg CO2-eq (A1-A3).

**Table 8:** Resource use

| | A1-A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|
| PERE [MJ] | 2,42E+00 | 1,50E-02 | 1,27E-03 | 0,00E00 | 5,70E-05 | 6,55E-03 | 1,95E-03 | -6,03E-01 |
| PERM [MJ] | 0,00E00 | 0,00E00 | 0,00E+00 | 0,00E00 | 0,00E00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| PERT [MJ] | 2,42E+00 | 1,50E-02 | 1,27E-03 | 0,00E00 | 5,70E-05 | 6,55E-03 | 1,95E-03 | -6,03E-01 |
| PENRE [MJ] | 9,40E+00 | 2,11E-01 | 2,19E-02 | 0,00E00 | 1,73E-02 | 9,00E-02 | 2,13E-02 | -2,30E+00 |
| PENRM [MJ] | 0,00E00 | 0,00E00 | 0,00E+00 | 0,00E00 | 0,00E00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| PENRT [MJ] | 9,40E+00 | 2,11E-01 | 2,19E-02 | 0,00E00 | 1,73E-02 | 9,00E-02 | 2,13E-02 | -2,30E+00 |
| SM [kg] | 1,40E-02 | 0,00E00 | 0,00E+00 | 0,00E00 | 0,00E00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| RSF [MJ] | 0,00E00 | 0,00E00 | 0,00E+00 | 0,00E00 | 0,00E00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| NRSF [MJ] | 0,00E00 | 0,00E00 | 0,00E+00 | 0,00E00 | 0,00E00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| FW [m3] | 3,93E-03 | 1,64E-05 | 3,00E-06 | 0,00E00 | 9,15E-08 | 7,15E-06 | 3,02E-06 | -2,30E-03 |

**Table 9:** Resource use indicator descriptions

| Acronym | Unit | Indicator |
|---|---|---|
| PERE | MJ | Use of renewable primary energy excluding renewable primary energy resources used as raw materials |
| PERM | MJ | Use of renewable primary energy resources used as raw materials |
| PERT | MJ | Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) |
| PENRE | MJ | Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials |
| PENRM | MJ | Use of non-renewable primary energy resources used as raw materials |
| PENRT | MJ | Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) |
| SM | kg | Use of secondary material |
| RSF | MJ | Use of renewable secondary fuels |
| NRSF | MJ | Use of non-renewable secondary fuels |
| FW | $m^3$ | Net use of fresh water |

**Table 10:** Waste categories and output flows

| | A1-A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|
| HWD [kg] | 8,58E-09 | 6,54E-13 | 7,32E-13 | 0,00E00 | 1,19E-13 | 2,79E-13 | 3,21E-13 | -1,22E-11 |
| NHWD [kg] | 8,90E-02 | 3,19E-05 | 5,95E-03 | 0,00E00 | 1,73E-06 | 1,38E-05 | 5,85E-02 | -8,51E-02 |
| RWD [kg] | 2,41E-04 | 3,92E-07 | 1,31E-07 | 0,00E00 | 1,85E-08 | 1,69E-07 | 1,45E-07 | 2,30E-05 |
| CRU [kg] | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| MFR [kg] | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E+00 | 5,85E-02 | 0,00E+00 |
| MER [kg] | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| EEE [MJ] | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| EET [MJ] | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |

**Table 11:** Waste category and output flow descriptions

| Acronym | Unit | Indicator |
|---|---|---|
| HWD | kg | Hazardous waste disposed |
| NHWD | kg | Non-hazardous waste disposed |
| RWD | kg | Radioactive waste disposed |
| CRU | kg | Components for reuse |
| MFR | kg | Materials for recycling |
| MER | kg | Materials for energy recovery |
| EEE | kg | Exported energy (electrical) |
| EET | kg | Exported energy (thermal) |

**Table 12:** Additional indicators*

| | A1-A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|
| PM [Disease incidences] | 3,45E-08 | 3,85E-10 | 6,08E-11 | 0,00E00 | 2,28E-11 | 2,67E-10 | 1,02E-10 | -3,16E-08 |
| IRP [kBq U235 eq.] | 3,71E-02 | 5,84E-05 | 1,72E-05 | 0,00E00 | 2,62E-06 | 2,52E-05 | 1,70E-05 | 3,96E-03 |
| ETPfw [CTUe] | 5,83E+00 | 1,49E-01 | 1,82E-02 | 0,00E00 | 1,25E-02 | 6,40E-02 | 2,16E-01 | -2,41E+00 |
| HTPc [CTUh] | 2,48E-10 | 3,05E-12 | 5,19E-13 | 0,00E00 | 2,33E-13 | 1,31E-12 | 1,12E-12 | -1,66E-10 |
| HTPnc [CTUh] | 1,75E-08 | 1,70E-10 | 4,99E-11 | 0,00E00 | 1,02E-11 | 8,20E-11 | 1,15E-10 | -1,49E-08 |
| SQP [Pt] | 4,88E+00 | 8,61E-02 | 3,11E-03 | 0,00E00 | 4,42E-05 | 3,75E-02 | 2,88E-03 | -2,58E+00 |

**Table 13:** Optional indicator descriptions

| Acronym | Unit | Indicator |
|---|---|---|
| PM | Disease incidence | Potential incidence of disease due to particulate matter emissions |
| IRP** | kBq U235 eq. | Potential human exposure efficiency relative to U235 |
| ETPfw* | CTUe | Potential Comparative Toxic Unit for ecosystems (fresh water) |
| HTPc* | CTUh | Potential Comparative Toxic Unit for humans (cancer) |
| HTPnc* | CTUh | Potential Comparative Toxic Unit for humans (non-cancer) |
| SQP* | Dimensionless | Potential soil quality index |

**Disclaimer for ADPE, ADPF, WDP, ETPfw, HTPc, HTPnc, SQP:* The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

***Disclaimer for ionizing radiation:* 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.

## Annex 1: The sales codes of all cables covered in this EPD

To calculate the actual GWPT of purchased product, just multiply the GWPT form this EPD with the length [m] of the purchased product sales code.

Example:

Sales code: 140F8500

Length: 300 m

GWPT: 0,484 kgCO2eq/m

Greenhouse gases from the cable 300 m x 0,484 kgCO2eq/m = 145,2 kgCO2eq

Table 13: DEVIpipeguard 10,25,33 30,60 Industry heating cables sales codes & DEVIiceguard heating cables, covered by this EPD

| DEVIpipeguard & DEVIiceguard | | |
|---|---|---|
| **Sales code** | **Product description** | **Length [m]** |
| 140F8500 | DEVIpipeguard 30 Industry | 300 |
| 00109027 | DEVIpipeguard 60 Industry | 300 |
| 98300708 | DEVIpipeguard 10 | 100 |
| 98300700 | DEVIpipeguard 10 | 300 |
| 98300707 | DEVIpipeguard 10 | 800 |
| 98300761 | DEVIpipeguard 25 | 100 |
| 98300759 | DEVIpipeguard 25 | 300 |
| 140F8503 | DEVIpipeguard 25 | 800 |
| 98300764 | DEVIpipeguard 33 | 305 |
| 98300810 | DEVIiceguard 18 Black | 100 |
| 98300809 | DEVIiceguard 18 Black | 300 |
| 140F8512 | DEVIiceguard 18 Black | 800 |

Table 14: DEVIhotwatt 45,55,70 heating cables sales codes, covered by this EPD

| DEVIhotwatt | | |
|---|---|---|
| **Sales code** | **Product description** | **Length [m]** |
| 98300955 | DEVIhotwatt 45 | 300 |
| 98300958 | DEVIhotwatt 55 | 100 |
| 98300957 | DEVIhotwatt 55 | 300 |
| 140F8507 | DEVIhotwatt 70 | 300 |

## References


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