

# Environmental Product Declaration



In accordance with ISO 14025 and EN 15804:2012+A2:2019 for:

## Altech Flexi connection hose for heating and cooling

from

**Saint-Gobain Building Distribution (SGDS)**



Program:	The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a>
Program operator:	EPD International AB
EPD registration number:	S-P-08520
Publication date:	2023-03-09
Valid until:	2028-03-08

*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at [www.environdec.com](http://www.environdec.com)*



## General information

### Program information

<b>Program:</b>	The International EPD® System
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CEN standard EN 15804:2012 +A2 (2019) serves as the Core Product Category Rules (PCR)

Product category rules (PCR): PCR 2019:14 Construction products (EN 15804:A2) (1.2.5)

PCR review was conducted by: *The Technical Committee of the International EPD® System. Chair: Claudia A. Peña. Contact via [info@environdec.com](mailto:info@environdec.com)*

Independent third-party verification of the declaration and data, according to ISO 14025:2006:

EPD process certification  EPD verification

Third-party verifier: *Vladimir Koci, [vladimir.koci@lcastudio.cz](mailto:vladimir.koci@lcastudio.cz)*



The procedure for follow-up of data during EPD validity involves third party verifier:

Yes  No

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EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. EPDs made according to EN15804+A1, and EN15804+A2 are not comparable, especially since a majority of the environmental indicators are based on different versions. For further information about comparability, see EN 15804 and ISO 14025.

## Company information

<b>Owner of the EPD</b>	Saint-Gobain Distribution Sweden
<b>Contact</b>	Beriar Maroof ( <a href="mailto:beriar.maroof@sgdsgruppen.se">beriar.maroof@sgdsgruppen.se</a> )
<b>Description of the organisation</b>	<p>SGDS Gruppen - specialists in collaboration for more efficient business in construction and installation. SGDS Gruppen AB is the head company of some of Sweden's leading trading companies in construction, sheet metal, tiles and installation. All the companies have a long and solid industry experience and provide most of Sweden's craftsmen with materials for various projects. Customers in different companies can also buy support items from the sister companies in the group. In selected cases, we take joint projects to facilitate the logistics of the supply of goods, which is then often critical for a smooth construction project.</p> <ul style="list-style-type: none"> <li>• Optimera - construction trade for professional carpenters</li> <li>• Dahl – heat, plumbing and sanitary specialist</li> <li>• Bevego - building sheet metal, ventilation and technical insulation</li> <li>• Kakelspecialisten and Konradsson's Tiles - tiles, tiling and bathroom fittings</li> </ul> <p>The company focuses on sales and services, with direct contact with about 150,000 customers regularly.</p> <p>Saint-Gobain Distribution Sweden group (SGDS) is owned by Saint-Gobain with a presence in 64 countries and over 190 000 employees worldwide.</p>
<b>Location of production site</b>	Bulgaria

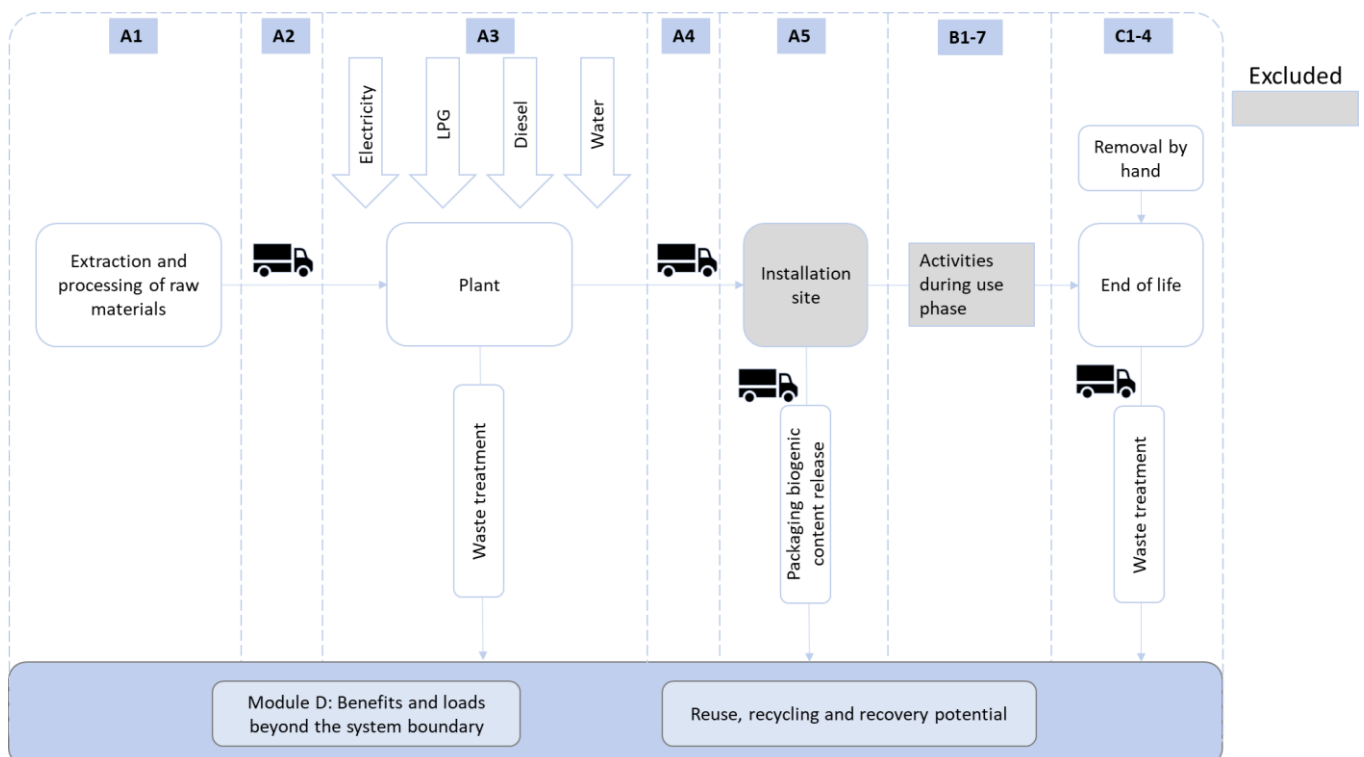


## Product information

<b>Product name</b>	Altech Oxy connection hose for heating and cooling
<b>Product identification</b>	ALT OXYSLANG VÄRME R 32-0,4M
<b>Product description</b>	Connecting hose used for heating systems and cooling systems in closed installations. The PE-RT hose comes with stainless steel braiding and have a water vapour barrier. Coupling in brass CW626N. The hoses supplied with couplings in various combinations of lengths and sizes.
<b>UN CPC code</b>	36320 - Tubes, pipes and hoses, and fittings, therefore of plastics
<b>Use</b>	Connecting hose for heating and cooling

## LCA information

<b>Functional unit</b>	1 hose with connectors
<b>Reference service life</b>	30 years
<b>Database(s) and LCA software used</b>	Calculation completed in GaBi v10.6.2.9 with an integrated Ecoinvent database 3.8
<b>System boundaries</b>	Cradle to grave with options (A1-A3, A4,C1-C4, D).



The factory purchases the raw materials and parts from a range of locations across Europe. The transport from suppliers to the Bulgarian factory has been accounted for in A2 and the transport to the Optimera stores in A4.

The end of life reflects the Nordic market, where 75% of mixed waste is landfilled, 7% incinerated with energy recovery and 17% recycled. For the credit for recovered electricity and heat (module D), EU datasets were used.

### Further information

This EPD uses the worst-case (heaviest) scenario in the Altech Oxy connection hose for heating and cooling family of products as the representative product.

### Modules declared

X = modules included, ND = not declared

	Product stage			Assembly stage		Use stage							End of life stage				Benefits & loads beyond system boundary
	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
Declared	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	EU	BG	BG	SE	-	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
Specific data used	Factory specific data for A3																
Variation-Products	0 %																
Variation-Sites	0 %																

### Data

Generic database data was used for the production of raw materials, energy, transportation, packaging and end-of-life. Specific data was collected from the factory.

### Time representativeness

The site-specific data used for the product manufacturing corresponds to 2021. The age of data from generic databases varies from 2013 – 2021.

### Data quality

All datasets used came from reputable databases GaBi and Ecoinvent, with good technological representativeness and which represent either Sweden or EU28 average. Therefore, it could be considered good.

### **Allocation**

No co-product allocation has been applied since no co-products are generated, and therefore allocation has not been relevant.

### **Cut-off criteria**

The general rules for the exclusion of inputs and outputs follow the requirements in EN 15804.

## **Content declaration**

### **Content**

Content declaration	Weight
Polyethylene	5 – 60 %
Brass	25 – 54 %
Stainless steel	22 – 48 %
Total	

For confidentiality reasons, the precise specification is not given here but was used in the calculations.

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional unit
Lead (in brass)	231-100-4	7439-92-1	<1%

### **Packaging**

Content declaration	Weight % vs product
Polyethylene film	1 %
Cardboard box	11 %
Wooden pallet	12 %

### **Information on the biogenic carbon content**

Biogenic carbon content	Unit per FU	Amount
Biogenic carbon content in the product	kg C	0
Biogenic carbon content in packaging	kg C	6.73E-02

*1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.*

### **Information on energy content**

Energy content	Unit per FU	Amount
Energy content in the product	MJ	1.26E+00

## Environmental Information

### Potential environmental impact – indicators according to EN 15804+A2

Results per functional unit: 1 hose with connectors									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-fossil	kg CO2 eq	1.39E+00	1.70E-01	0	0	5.14E-03	2.56E-02	7.47E-02	-6.49E-02
GWP-biogenic	kg CO2 eq	-3.70E-01	-2.34E-04	2.47E-01	0	-7.07E-06	3.11E-02	6.30E-01	1.36E-03
GWP-luluc	kg CO2 eq	1.55E-03	9.44E-04	0	0	2.85E-05	-3.15E-07	1.98E-05	-2.99E-05
GWP-total	kg CO2 eq	1.02E+00	1.71E-01	2.47E-01	0	5.16E-03	5.66E-02	7.05E-01	-6.35E-02
ODP	kg CFC-11 eq	4.78E-09	1.01E-14	0	0	3.06E-16	1.08E-14	4.69E-14	-1.96E-13
AP	mole H+ eq	5.91E-03	3.18E-04	0	0	7.96E-06	2.77E-05	1.78E-04	-2.32E-04
EP-freshwater	kg P eq	1.34E-05	5.06E-07	0	0	1.53E-08	4.29E-09	1.35E-05	-1.45E-07
EP-marine	kg N eq	9.52E-04	1.32E-04	0	0	3.14E-06	1.10E-05	1.53E-04	-3.59E-05
EP-terrestrial	mole N eq	1.01E-02	1.50E-03	0	0	3.60E-05	1.41E-04	6.41E-04	-3.75E-04
POCP	kg NMVOC eq	3.12E-03	2.85E-04	0	0	7.09E-06	2.85E-05	3.66E-04	-1.19E-04
ADP-minerals & metals	kg Sb eq	1.62E-04	1.42E-08	0	0	4.28E-10	1.33E-10	2.46E-09	-6.44E-06
ADP-fossil	MJ	1.95E+01	2.26E+00	0	0	6.84E-02	2.95E-02	5.02E-01	-1.26E+00
WDP	m3	2.52E-01	1.52E-03	0	0	4.59E-05	9.44E-03	2.41E-03	-1.09E-02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

## Use of resources

Results per functional unit: 1 hose with connectors									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	3.90E+00	1.29E-01	0	0	3.89E-03	6.07E-03	4.11E-02	9.00E-01
PERM	MJ	2.93E+00	0	0	0	0	0	0	-1.32E+00
PERT	MJ	6.84E+00	1.29E-01	0	0	3.89E-03	6.07E-03	4.11E-02	-4.18E-01
PENRE	MJ	1.64E+01	2.27E+00	0	0	6.85E-02	2.95E-02	5.02E-01	4.87E-01
PENRM	MJ	3.09E+00	0	0	0	0	0	0	-1.75E+00
PENRT	MJ	1.95E+01	2.27E+00	0	0	6.85E-02	2.95E-02	5.02E-01	-1.26E+00
SM	kg	4.66E-01	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m3	7.52E-03	1.46E-04	0	0	4.39E-06	2.21E-04	7.08E-05	-6.81E-04
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water								

## Additional voluntary indicators

Results per functional unit: 1 hose with connectors									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG	kg CO2 eq	1.03E+00	1.67E-01	0	0	5.05E-03	5.65E-02	5.23E-01	-6.16E-02
EP	kg PO4 eq	4.27E-04	5.12E-05	0	0	1.26E-06	4.31E-06	5.26E-04	-1.45E-05
Acronyms	GWP-GHG global warming potential - greenhouse gases; EP eutrophication potential								

These indicators support comparability with EPDs based on the previous version of EN 15804 (EN 15804:2012+A1:2013).



## Waste and output flows

### Waste

Results per functional unit: 1 hose with connectors									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	2.43E-08	1.09E-11	0	0	3.28E-13	2.89E-12	7.64E-11	-2.91E-10
NHWD	kg	1.60E-01	3.25E-04	0	0	9.82E-06	6.96E-03	5.20E-01	-6.71E-03
RWD	kg	5.77E-04	2.79E-06	0	0	8.44E-08	1.44E-06	6.09E-06	-1.43E-04
Acronyms	HW Hazardous waste disposed; NHW Non-hazardous waste disposed; RW Radioactive waste disposed								

### Output flows

Results per functional unit: 1 hose with connectors									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
CRU	kg	0	0	0	0	0	0	0	0
MFR	kg	-2.13E-03	0	0	0	0	1.46E-01	0	0
MER	kg	0	0	0	0	0	6.03E-02	0	0
EEE	MJ	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0
Acronyms	CRU Components for reuse; MFR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy								

## Disclaimers

ILCD classification	Indicator	Disclaimer
ILCD Type 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
ILCD Type 2	Acidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
	Potential Human exposure efficiency relative to U235 (IRP)	1
	Potential Human exposure efficiency relative to U235 (IRP)	1
ILCD Type 3	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
	Potential Soil quality index (SQP)	2
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 on these results are high or as there is limited experienced with the indicator.		

## References

Association of Issuing Bodies (2022)	European Residual Mixes 2021
EN 15804:2012+A2	Sustainability of construction works – Environmental product declaration – Core rules for the product category of constructions products
EPD International (2021)	General Programme Instructions of the International EPD® System, version 4.0
Eurostat (2022)	<a href="https://ec.europa.eu/eurostat/web/main/data/database">https://ec.europa.eu/eurostat/web/main/data/database</a> Accessed 2022-12-06
ISO 14025:2006	International Standard ISO 14025 – Environmental labels and declarations – Type III environmental declarations – Principles and procedures
ISO 14040:2006	International Standard ISO 14040: Environmental Management – Life cycle assessment – Principles and framework. Second edition 2006-07-01.

ISO 14044:2006

International Standard ISO 14044: Environmental Management – Life cycle assessment – Requirements and Guidelines.





Google Maps

<https://www.google.co.uk/maps>

PCR 2019:14

PCR 2019:14. v1.1. Construction products (EN 15804:A2) (1.2.5)

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