

Environmental Product Declaration



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

Roof safety products

from

Per Wikstrand AB



Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products from a company
EPD registration number:	EPD-IES-0034442
Version date:	2026-08-31
Validity date:	2031-08-31

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. List of products is presented 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): Construction products 2019:14 v.2.0.1 UN CPC code: 412
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 and Noa Meron (co-chair). The review panel may be contacted via the Secretariat www.environdec.com/contact .

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
☒ Individual EPD verification without a pre-verified LCA/EPD tool Third-party verifier: David Althoff Palm, Dalemarken AB Approved by: International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ 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: Per Wikstrand AB

Address: Dössjonsvägen 10, 792 36 Mora

Contact: Hans Westerberg, info@perwikstrand.se

Address and contact information of the LCA practitioner commissioned by the EPD owner:

Annie Johansson, annie.johansson@sweco.se.

Sweco Sverige AB, Gjörwellsgatan 22, 112 60 Stockholm

Description of the organisation: Per Wikstrand AB employs approximately 10 people and has manufactured roof safety products since the mid-1980s. Since 2000, the company has also manufactured firewood processors. Extensive experience and a strong focus on quality characterize the entire product portfolio, covering both roof safety products and firewood processors. Our goal is to remain at the forefront of manufacturing, development, and sales, while continuing to strengthen the company's strong brand. Since 1992, Per Wikstrand AB has been part of the Weland Group and operates within the organizational structure of Weland Stål. Collaboration takes place within product development and certain manufacturing activities.

PRODUCT INFORMATION

Product name: Roof safety products

Product identification and description:

The products are manufactured from steel with a zinc/magnesium (ZM310) coating, a material with corrosion resistance. The calculated service life is at least 30 years. The products are designed with a focus on material efficiency, structural strength, and ease of installation. They can be safely and easily installed on all types of roofs. All roof safety products are tested and approved in accordance with applicable standards by an independent third party. The test facility is located at Weland Stål's premises in Ulricehamn, Sweden.

Per Wikstrand provides a wide range of roof safety products, which can be galvanized or powder-coated. The product range is divided into the following groups:

- Folding escape ladder
- Facade ladders
- Slip protection
- Lifeline loops/guardrail
- Ridge and eaves guardrail
- Guardrails
- Snow guards
- Roof walkway, profiled grating
- Roof steps
- Roof ladders
- Wire system
- Brackets and supports
- Fixings
- Facade ladder fixings
- Roof ladder fixings



UN CPC code: 412

Name and location of production site: Per Wikstrand AB, Mora

See Per Wikstrand AB's website for more information on the product:

<https://www.perwikstrand.se/sv-se/taksaekerhet/>

CONTENT DECLARATION

The content declaration per 1 kg of roof safety product, weighted based on production volumes.

Product content	Mass, kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/declared unit
Steel with or without surface treatment (powder coating or galvanization)	1	8% (0-53%)	0 %	0
TOTAL	1	8% (0-53%)	0 %	0

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C/declared unit
Plastic film	0,00061	0,061%	0
Cardboard	0,00051	0,051%	0,00023
Fibreboard	0,0055	0,55%	0,0023
Wooden pallet	0,12	12%	0,056
TOTAL	0,13	13%	0,059

1 kg biogenic carbon in the packaging is equivalent to the uptake of 44/12 kg of CO₂.

Since the EPD doesn't include module A5, the biogenic uptake from packaging was balanced out in module A3.

The product does not include any substances on the SVHC list.

LCA INFORMATION

Declared unit: 1 kg of roof safety product

Time representativeness: 2025

Geographical scope: A1-A2: Europe and Global. A3 and C: Sweden

Database and LCA software used: Ecoinvent 3.11 and SimaPro v.10.2.

Impact assessment method: Categories, units and parameters used to describe environmental impacts were selected according to PCR 2019:14. Characterization factors used to assess material and energy flows were applied according to EN 15804:2012+A2:2019/AC:2021 based on EF 3.1.

Description of system boundaries: Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D).

A1: Material and components supply

Module A1 includes extraction and processing of raw materials used for the manufacturing of the materials and components used in the products.

A2: Transport to manufacturing

Module A2 includes the transport of materials to manufacturing of products and includes both the impact from production and combustion of fuels during the transports.

A3: Manufacturing

Module A3 includes the manufacturing process of the roof safety products at Per Wikstrand's facility. The steel is procured and pressed and formed at the facility in Mora. Some products are welded. The production process includes both manual and machine-based process steps. Some products are purchased as finished goods and stored without further processing. Module A3 includes the impact related to energy use, water use and management of waste that is generated at the facility as well as packaging for the finished products.

C1: Deconstruction

Module C1 includes deconstruction of the product. It covers diesel consumption from machine use during the deconstruction of the roof safety product. Default data from PCR 2019:14 has been used.

C2: Transport to waste treatment

Module C2 includes the emissions from transport of the products to waste treatment. The assumed transport is a EURO 5 truck of size 16-32 metric ton, and the assumed distance is 80 km.

C3: Waste processing

Module C3 includes waste processing of the products, in this case recycling. The applied scenario assumes that 95% of the product is recycled. Default data from PCR 2019:14 has been used for energy use (diesel and electricity) for loading and unloading at the sorting facility, mechanical sorting, and steel fragging. The electricity used is Swedish consumption mix.

C4: Disposal

Module C4 includes landfill disposal of the 5% of the product that is assumed to be non-recyclable. In

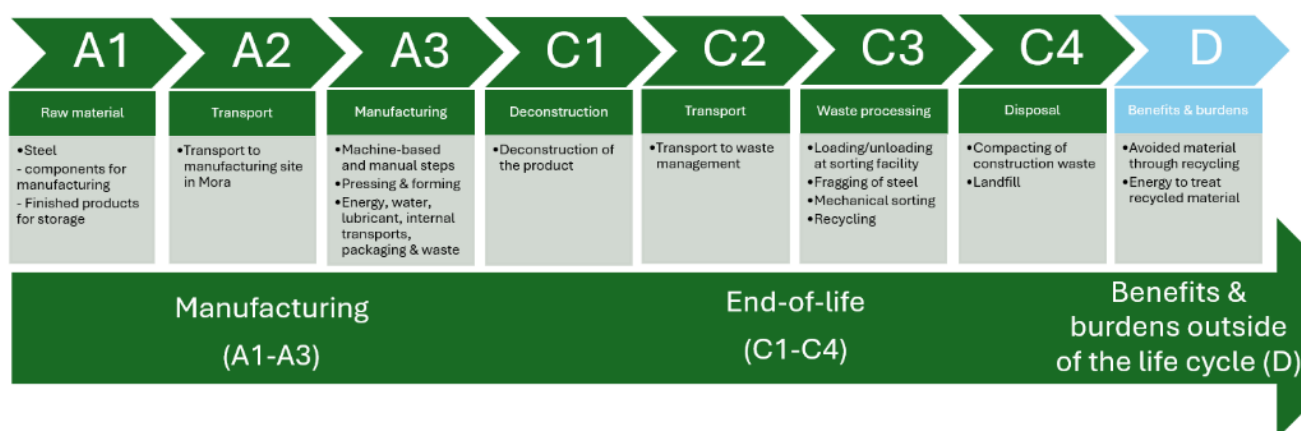
addition, default data from PCR 2019:14 has been applied for the energy use associated with the compacting of inert construction waste prior to landfill disposal.

D: Benefits and burdens beyond the system boundary

Module D includes benefits and burdens from the material recovery of steel. The avoided material through recycling is seen as a benefit, while the energy to treat the recycled material until it is functionally equivalent to the assumed substituted material is considered a burden.

Process flow diagram:

A system diagram displaying the included life cycle modules is presented below. End-of-waste for incoming steel is reached when steel scrap is accepted as a recovered material input in A1. End-of-waste for outgoing steel is reached after processing, sorting and recycling in C3, when the material is qualified again as recovered steel.



Electricity in A3:

The purchased electricity is without environmental add-ons and has been modelled as Swedish residual mix. The climate impact, using the GWP-GHG indicator, of electricity purchased in A3 is 0,081 kg CO₂-eq./kWh.

End-of-life:

At the end-of-life the product is deconstructed and then transported to waste management. A realistic scenario has been used where 95% of the steel goes to recycling, the rest goes to landfill.

Allocation procedure:

In module A1, the material composition per declared unit of the roof safety product was allocated based on annual purchase volumes (kg) for 2025.

In module A3, several allocation steps were applied to distribute the collected data to 1 kg of roof safety product. First, energy and water use were allocated based on the share of the total factory floor area attributable to Per Wikstrand, as part of the facility is leased to another party.

To separate roof safety products from other products manufactured at the site, all inputs, such as lubricants and waste as well as energy and water use, were subsequently economically allocated based on the share of revenue.

Finally, mass-based allocation using total purchased volumes for 2025 was applied to present the results per 1 kg of roof safety product.

Ecoinvent datasets for cut-off allocation have been used following the polluter pays principle. The environmental burden from handling of the waste from the products until the waste has reached a positive market value again is allocated to the producer of the product.

Cut-off criteria:

The cut-off criteria established by the PCR is 1% of all material and energy flows to a single unit process and 5% of total inflows (mass and energy) per module. No cut-offs exceeding this limit have been made. Production and end-of-life processes of infrastructure and capital goods used in the product system have been excluded, except for datasets for electricity and heat.

Data quality assessment:

Specific data has been collected through relevant documentation from Per Wikstrand AB's own production and supplier production representing the production year 2025. Collected data reflects the current production and was gathered from March to May 2026.

Five upstream EPDs have been used as data sources for this EPD. Four of them are published within EPD International but follow an older version of the PCR, while the fifth is published in EPD Hub. As a result, these EPDs are not fully compliant with the LCA rules applied in this EPD. The EPD with the biggest impact on the results is based on EF 3.0, whereas this EPD is based on EF 3.1, resulting in conservative values. All upstream EPDs used are valid, and since they are considered the most representative for the input materials, their use as data sources is justified.

The general data quality and robustness of the results are considered good according to EN15804. Calculations for the share of primary data contributing to GWP-GHG results in the manufacturing stage is found in Table 1.

Table 1: Calculations for the share of primary data contributing to GWP-GHG results in the manufacturing stage.

Module	Process	Source type	Source & data category	Reference year	Share of primary data of GWP-GHG results for A1-A3
A1	Solar panel fixing systems and roof safety products	EPD	Secondary and primary data from EPD	2023	41%
A1	Hot dip galvanised steel coils with Magnelis coating	EPD	Secondary and primary data from EPD	2024	21%
A1	Steel precision tubes	EPD	Secondary and primary data from EPD	2026	0%*
A3	Energy use at Per Wikstrand	Collected data	Primary data from EPD owner	2025	1%
A1-A3	Other processes	Database /EPD	Secondary and primary data from EPD and Ecoinvent 3.11.	2010-2025	0%
Total share of primary data of GWP-GHG results for A1-A3					63%

*As the share of primary data in the EPD is not known, it is conservatively assumed to be 0% in accordance with PCR 4.6.5.1.

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	Reuse-Recovery-Recycling- potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	GLO	GLO	SE	ND	ND	ND	ND	ND	ND	ND	ND	ND	SE	SE	SE	SE	SE
Share of primary data	63 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	+28/-42 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-

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.

The EPD includes all of Per Wikstrand's roof safety products and the declared results are based on average results for this product group. In the table below, a comparison is made between the results for the average product and, for each impact category, the result from the product with the largest deviation from the base scenario. The results show some variation. However, since all of Per Wikstrand's roof safety products have a similar function and as the larger deviations represent a small share of the production this approach is still deemed representative.

Variation of Environmental Impact (A1-C4)

Indicator	Unit	Base scenario	Largest variation	Share of production volume representing the variation
GWP-total	kg CO ₂ eq.	3,27E+00	45%	0,3%
GWP-fossil	kg CO ₂ eq.	3,13E+00	42%	0,3%
GWP-biogenic	kg CO ₂ eq.	1,34E-01	190%	0,02%
GWP-luluc	kg CO ₂ eq.	3,63E-03	120%	0,02%
GWP-GHG	kg CO ₂ eq.	3,14E+00	42%	0,3%
ODP	kg CFC 11 eq.	3,15E-08	153%	4%
AP	mol H ⁺ eq.	1,00E-02	115%	1%
EP-freshwater	kg P eq.	1,64E-03	187%	4%
EP-marine	kg N eq.	4,94E-03	89%	0,3%
EP-terrestrial	mol N eq.	3,65E-02	105%	0,02%
POCP	kg NMVOC eq.	6,36E-03	71%	1%
ADP-minerals & metals*	kg Sb eq.	4,26E-05	170%	0,02%
ADP-fossil*	MJ	3,29E+01	34%	0,02%
WDP*	m ³	1,56E+00	145%	0,3%

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

** 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 experience with the indicator.*

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.

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).

Mandatory impact category indicators according to EN 15804

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	3,25E+00	3,99E-04	1,52E-02	3,24E-03	3,42E-04	-1,47E+00
GWP-fossil	kg CO ₂ eq.	3,11E+00	3,99E-04	1,52E-02	3,23E-03	3,42E-04	-1,50E+00
GWP-biogenic	kg CO ₂ eq.	1,34E-01	8,07E-08	1,04E-05	3,33E-06	1,59E-07	2,76E-02
GWP-luluc	kg CO ₂ eq.	3,62E-03	4,08E-08	5,04E-06	7,82E-06	1,81E-07	-3,23E-04
ODP	kg CFC 11 eq.	3,11E-08	5,92E-12	3,32E-10	4,91E-11	9,16E-12	-6,33E-09
AP	mol H ⁺ eq.	9,95E-03	3,56E-06	4,89E-05	2,87E-05	2,45E-06	-5,25E-03
EP-freshwater	kg P eq.	1,64E-03	1,28E-08	1,04E-06	1,27E-07	2,83E-08	-5,93E-04
EP-marine	kg N eq.	4,91E-03	1,66E-06	1,65E-05	1,33E-05	9,62E-07	-1,21E-03
EP-terrestrial	mol N eq.	3,61E-02	1,82E-05	1,79E-04	1,45E-04	1,05E-05	-1,36E-02
POCP	kg NMVOC eq.	6,24E-03	5,43E-06	7,41E-05	4,34E-05	3,71E-06	-4,70E-03
ADP-minerals & metals*	kg Sb eq.	4,25E-05	1,42E-10	5,13E-08	2,36E-09	4,68E-10	-3,97E-07
ADP-fossil*	MJ	3,29E+01	2,02E-04	1,70E-02	1,07E-02	4,80E-04	-1,32E+01
WDP*	m ³	1,56E+00	1,11E-05	8,37E-04	2,11E-04	3,35E-04	-9,91E-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						

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Additional mandatory and voluntary impact category indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	3,12E+00	3,99E-04	1,52E-02	3,24E-03	3,42E-04	-1,50E+00
PM	disease inc.	2,76E-07	1,02E-10	1,22E-09	8,14E-10	5,78E-11	-1,13E-07
IRP ²	kBq U-235 eq	4,87E-01	2,21E-06	2,57E-04	6,93E-04	4,75E-06	-1,52E-02
ETP-fw ³	CTUe	2,20E+01	2,81E-04	2,86E-02	2,49E-03	5,75E-04	-3,89E+00
HTP-c ³	CTUh	3,91E-09	4,05E-14	2,58E-12	3,56E-13	5,94E-14	-2,17E-09
HTP-nc ³	CTUh	5,04E-08	6,37E-13	1,35E-10	6,66E-12	1,31E-12	-3,08E-09
SQP ³	Pt	1,27E+01	3,44E-04	1,28E-01	4,99E-03	1,51E-02	-2,37E+00
Acronyms	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality						

Resource use indicators

Since the EPD doesn't include module A5, the energy from packaging was balanced out in modules A1-A3.

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	4,49E+00	3,27E-05	3,51E-03	6,12E-03	7,41E-05	-3,15E-01
PERM	MJ	5,12E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	4,50E+00	3,27E-05	3,51E-03	6,12E-03	7,41E-05	-3,15E-01
PENRE	MJ	3,42E+01	2,12E-04	1,77E-02	1,08E-02	5,04E-04	-1,39E+01
PENRM	MJ	2,56E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	3,42E+01	2,12E-04	1,77E-02	1,08E-02	5,04E-04	-1,39E+01

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.

² 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.

³ The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

SM	kg	8,00E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	2,07E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	1,67E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	1,03E-02	3,79E-07	3,21E-05	5,46E-06	8,00E-06	-5,49E-03
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						

Waste indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,25E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	kg	1,04E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	kg	3,21E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Output flow indicators

Results per declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	1,43E+00	0,00E+00	0,00E+00	9,50E-01	0,00E+00	0,00E+00
Materials for energy recovery	kg	1,87E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

SCENARIOS FOR END-OF-LIFE

In accordance with the PCR, 100% scenarios should be developed. If any of the declared scenarios is a mix of end-of-life alternatives (reuse, recycling, incineration with energy recovery, landfill, etc.), also the corresponding 100% scenarios (100% reuse, 100% recycling, 100% incineration with energy recovery, 100% landfill, etc.) shall be declared. In other words, the 100% scenarios of relevance for the intended market shall be declared.

Scenarios shall be realistic and representative for the most probable end-of-life treatment alternatives considering the geographical scope of the EPD. However, also relevant 100% scenarios shall be declared, as described above, even if they are not realistic. As the products are sold on the Swedish market, the original scenario developed is estimated to be the most accurate one.

Scenarios identified, apart from the most likely one developed in the study for the market, are 100% recycling and 100% landfill. The results for modules C3, C4 and D changes when one of the alternative scenarios is used. In the table below, the original results for the mandatory impact categories for these modules are presented together with the corresponding results for each alternative scenario.

100%-scenarios										
Indicator	Unit	C3	C3 – 100% recycling	C3 – 100% landfill	C4	C4 – 100% recycling	C4 – 100% landfill	D	D – 100% recycling	D – 100% landfill
GWP-total	kg CO ₂ -eq.	3,24E-03	3,41E-03	0,00E+00	3,42E-04	0,00E+00	6,84E-03	-1,47E+00	-1,55E+00	0,00E+00
GWP-fossil	kg CO ₂ -eq.	3,23E-03	3,40E-03	0,00E+00	3,42E-04	0,00E+00	6,84E-03	-1,50E+00	-1,58E+00	0,00E+00
GWP-biogenic	kg CO ₂ -eq.	3,33E-06	3,51E-06	0,00E+00	1,59E-07	0,00E+00	3,18E-06	2,76E-02	2,90E-02	0,00E+00
GWP-luluc	kg CO ₂ -eq.	7,82E-06	8,23E-06	0,00E+00	1,81E-07	0,00E+00	3,62E-06	-3,23E-04	-3,40E-04	0,00E+00
ODP	kg CFC 11 eq.	4,91E-11	5,17E-11	0,00E+00	9,16E-12	0,00E+00	1,83E-10	-6,33E-09	-6,66E-09	0,00E+00
AP	mol H ⁺ eq.	2,87E-05	3,02E-05	0,00E+00	2,45E-06	0,00E+00	4,90E-05	-5,25E-03	-5,52E-03	0,00E+00
EP-freshwater	kg P eq.	1,27E-07	1,33E-07	0,00E+00	2,83E-08	0,00E+00	5,67E-07	-5,93E-04	-6,24E-04	0,00E+00
EP-marine	kg N eq.	1,33E-05	1,40E-05	0,00E+00	9,62E-07	0,00E+00	1,92E-05	-1,21E-03	-1,27E-03	0,00E+00
EP-terrestrial	mol N eq.	1,45E-04	1,53E-04	0,00E+00	1,05E-05	0,00E+00	2,10E-04	-1,36E-02	-1,43E-02	0,00E+00
POCP	kg NMVOC eq.	4,34E-05	4,57E-05	0,00E+00	3,71E-06	0,00E+00	7,42E-05	-4,70E-03	-4,95E-03	0,00E+00
ADPm	kg Sb eq.	2,36E-09	2,48E-09	0,00E+00	4,68E-10	0,00E+00	9,37E-09	-3,97E-07	-4,18E-07	0,00E+00
ADPf	MJ	1,07E-02	1,12E-02	0,00E+00	4,80E-04	0,00E+00	9,60E-03	-1,32E+01	-1,39E+01	0,00E+00

WDP	m ³	2,11E-04	2,22E-04	0,00E+00	3,35E-04	0,00E+00	6,70E-03	-9,91E-02	-1,04E-01	0,00E+00
GWP-GHG	kg CO ₂ eq.	3,24E-03	3,41E-03	0,00E+00	3,42E-04	0,00E+00	6,84E-03	-1,50E+00	-1,58E+00	0,00E+00
PM	disease inc.	8,14E-10	8,57E-10	0,00E+00	5,78E-11	0,00E+00	1,16E-09	-1,13E-07	-1,19E-07	0,00E+00
IRP	kBq U-235 eq	6,93E-04	7,29E-04	0,00E+00	4,75E-06	0,00E+00	9,50E-05	-1,52E-02	-1,60E-02	0,00E+00
ETP-fw	CTUe	2,49E-03	2,62E-03	0,00E+00	5,75E-04	0,00E+00	1,15E-02	-3,89E+00	-4,10E+00	0,00E+00
HTP-c	CTUh	3,56E-13	3,75E-13	0,00E+00	5,94E-14	0,00E+00	1,19E-12	-2,17E-09	-2,28E-09	0,00E+00
HTP-nc	CTUh	6,66E-12	7,02E-12	0,00E+00	1,31E-12	0,00E+00	2,63E-11	-3,08E-09	-3,25E-09	0,00E+00
SQP	Pt	4,99E-03	5,26E-03	0,00E+00	1,51E-02	0,00E+00	3,02E-01	-2,37E+00	-2,49E+00	0,00E+00
PERE	MJ	6,12E-03	6,44E-03	0,00E+00	7,41E-05	0,00E+00	1,48E-03	-3,15E-01	-3,31E-01	0,00E+00
PERM	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	0,00E+00
PERT	MJ	6,12E-03	6,44E-03	0,00E+00	7,41E-05	0,00E+00	1,48E-03	-3,15E-01	-3,31E-01	0,00E+00
PENRE	MJ	1,08E-02	1,13E-02	0,00E+00	5,04E-04	0,00E+00	1,01E-02	-1,39E+01	-1,46E+01	0,00E+00
PENRM	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	0,00E+00
PENRT	MJ	1,08E-02	1,13E-02	0,00E+00	5,04E-04	0,00E+00	1,01E-02	-1,39E+01	-1,46E+01	0,00E+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	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	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	0,00E+00
FW	m3	5,46E-06	5,75E-06	0,00E+00	8,00E-06	0,00E+00	1,60E-04	-5,49E-03	-5,78E-03	0,00E+00
HWD	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	0,00E+00
NHWD	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	0,00E+00
RWD	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	0,00E+00
CRU	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	0,00E+00
MFR	kg	9,50E-01	1,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

MER	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	0,00E+00
EEE	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	0,00E+00
EET	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	0,00E+00

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EPD	Environmental Product Declaration
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rules
c-PCR	Complementary Product Category Rules
CEN	European Committee for Standardization
CPC	Central product classification
Environmental Impact Indicators (EN 15804)	
GHG	Greenhouse gas
GWP	Global Warming Potential (kg CO ₂ eq.)
GWP-fossil	Global Warming Potential from fossil sources (kg CO ₂ eq.)
GWP-biogenic	Global Warming Potential from biogenic sources (kg CO ₂ eq.)
GWP-land use	Global Warming Potential from land use and land use change (kg CO ₂ eq.)
GWP-total	Total Global Warming Potential (kg CO ₂ eq.)
GWP-GHG	Global Warming Potential for greenhouse gases (kg CO ₂ eq.)
ODP	Ozone Depletion Potential (kg CFC-11 eq.)
AP	Acidification Potential (mol H ⁺ eq.)
EP	Eutrophication Potential
EP-freshwater	Freshwater eutrophication potential (kg P eq.)
EP-marine	Marine eutrophication potential (kg N eq.)
EP-terrestrial	Terrestrial eutrophication potential (mol N eq.)
POCP	Photochemical Ozone Creation Potential (kg NMVOC eq.)
ADP	Abiotic Depletion Potential
ADP-minerals & metals	Abiotic depletion potential for non-fossil resources (kg Sb eq.)
ADP-fossil	Abiotic depletion potential for fossil resources (MJ)
WDP	Water Deprivation Potential (m ³)
Resource Use Indicators	

PERE	Use of renewable primary energy excluding renewable primary energy resources used as raw materials (MJ)
PERM	Use of renewable primary energy resources used as raw materials (MJ)
PERT	Total use of renewable primary energy resources (MJ)
PENRE	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (MJ)
PENRM	Use of non-renewable primary energy resources used as raw materials (MJ)
PENRT	Total use of non-renewable primary energy resources (MJ)
SM	Use of secondary material (kg)
RSF	Use of renewable secondary fuels (MJ)
NRSF	Use of non-renewable secondary fuels (MJ)
FW	Use of net fresh water (m ³)
Waste Indicators	
HW	Hazardous Waste (disposed) (kg)
NHW	Non-Hazardous Waste (disposed) (kg)
RW	Radioactive Waste (disposed) (kg)
Output Flow Indicators	
CFR	Components for Reuse (kg)
MR	Material for Recycling (kg)
MER	Materials for Energy Recovery (kg)
EEE	Exported Energy, Electricity (MJ)
EET	Exported Energy, Thermal (MJ)
Lifecycle Stages / Modules	
A1	Raw material supply
A2	Transport
A3	Manufacturing
A4	Transport to site
A5	Construction/Installation
B1	Use
B2	Maintenance
B3	Repair
B4	Replacement
B5	Refurbishment
B6	Operational energy use
B7	Operational water use
C1	Deconstruction/Demolition
C2	Transport to waste processing
C3	Waste processing
C4	Disposal
D	Reuse-Recovery-Recycling potential
Other Relevant Terms	
SVHC	Substances of Very High Concern
MJ	Megajoule
kg	Kilogram

m ³	Cubic Meter
NM VOC	Non-Methane Volatile Organic Compounds
Sb eq.	Antimony Equivalents
P eq.	Phosphorus Equivalents
N eq.	Nitrogen Equivalents
CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CO ₂ eq.	Carbon Dioxide Equivalents
kg C	Kilograms of Carbon
kg CO ₂ eq.	Kilograms of Carbon Dioxide Equivalent
ND	Not Declared

REFERENCES

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ISO 14044:2006. Environmental management — Life cycle assessment — Requirements and guidelines.

LCA report Per Wikstrand AB. Sweco. Asker, Johansson, Lindqvist & Halonen.

VERSION HISTORY

Original Version of the EPD, 2026-08-31

