

Environmental Product Declaration

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

Safety valve AVI 1890-S, G3/4", a- collection



Ahlsell AB



Programme	The International EPD System, www.environdec.com
Programme operator	EPD International AB
Type of EPD	EPD published by trader EPD of multiple products, based on average product
EPD registration number	EPD-IES-0026386
Version date	2026-02-24
Validity date	2031-02-23

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

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

PCR and verification

Product Category Rules (PCR)	CEN standard EN 15804 serves as the Core Product Category Rules (PCR) Construction products (EN 15804:A2) PCR review was conducted by the Technical Committee of the International EPD System. See https://environdec.com/about-us/the-international-epd-system-about-the-system for a list of members. Review chair: Rob Rouwette. The review panel may be contacted via the Secretariat www.environdec.com/contact.
Third-party verification:	External and independent "third-party") verification of the declaration and data, according to ISO14025:2006, via EPD verification through: ☒ Individual EPD verification without a pre-verified LCA/EPD tool Third-party verifier: : Vijay Thakur  Approved by: The 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

EPD owner	Ahlsell AB
Contact	Ekathrine Lagovardos
Contact details	ekathrine.lagovardos@ahlsell.se
Address	SE-117 98 Stockholm, Sweden
Description of the organisation	Ahlsell AB is present where people reside, work, and live their lives. Ahlsell AB is currently the Nordic region's leading community-building distributor of installation products, tools, and supplies for installation, construction, real estate management, industrial and power companies, and the public sector. With around 7,500 employees, 300 stores, e-commerce, and four central warehouses, we are working daily to achieve our vision of building a more sustainable society.
Product-related or management system-related certifications:	ISO 9001 & ISO 14001
Life Cycle Assessment (LCA)	CarbonZero AB

Product information

Product name(s)	Safety valve AVI 1890-S 8bar, G3/4"xG3/4" -10°C-+120°C, Safety valve AVI 1890-S 10bar, G3/4"xG3/4" -10°C-+120°C and Safety valve AVI 1890-S 8bar, G3/4"xG3/4" -10°C-+120°C.
Product description:	
UN CPC code	4151 - Semi-finished products of copper or copper alloys
Name and location of production site(s):	Name of plant: Hallsberg Location: Idrottsvägen 3, 694 30 Hallsberg, Sweden
Technical or actual lifespan	10 years

Product image



Manufacturing process

The products are manufactured according to EU regulations and international standards. This is consistent throughout the entire process, which includes casting/forging, machining, assembly, surface treatments and Quality Control.

Content declaration

Product Components	Mass, kg	Post-consumer material, mass-% of products	Biogenic material, mass-% of product	Biogenic material, kg C / declared unit
Plastic	1,37E-01	0,00%	0,00%	0,00E+00
Metal	8,52E-01	2,60%	0,00%	0,00E+00
Rubber	1,09E-02	0,00%	0,00%	0,00E+00
Total	1,00E+00	2,60%	0,00%	0,00E+00

Packaging Materials	Mass, kg	Mass-% (versus the product)	Biogenic material, mass-% of product	Biogenic material kg C/declared unit
Paper	1,93E-01	19,30%	8,17%	8,17E-02
Total	1,93E-01	19,30%	8,17%	8,17E-02

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
No hazardous materials			

At the date of issue of this declaration, there is no "Substance of Very High Concern" (SVHC) in concentration above 0.1% by weight, and neither does the packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals)

Products included in this study

Product Name	Weight	Unit
Safety valve AVI 1890-S 8bar, G3/4"xG3/4" -10°C-+120°C	1,000	kg
Safety valve AVI 1890-S 10bar, G3/4"xG3/4" -10°C-+120°C	1,000	kg
Safety valve AVI 1890-S 6bar, G3/4"xG3/4" -10°C-+120°C	1,000	kg

LCA information

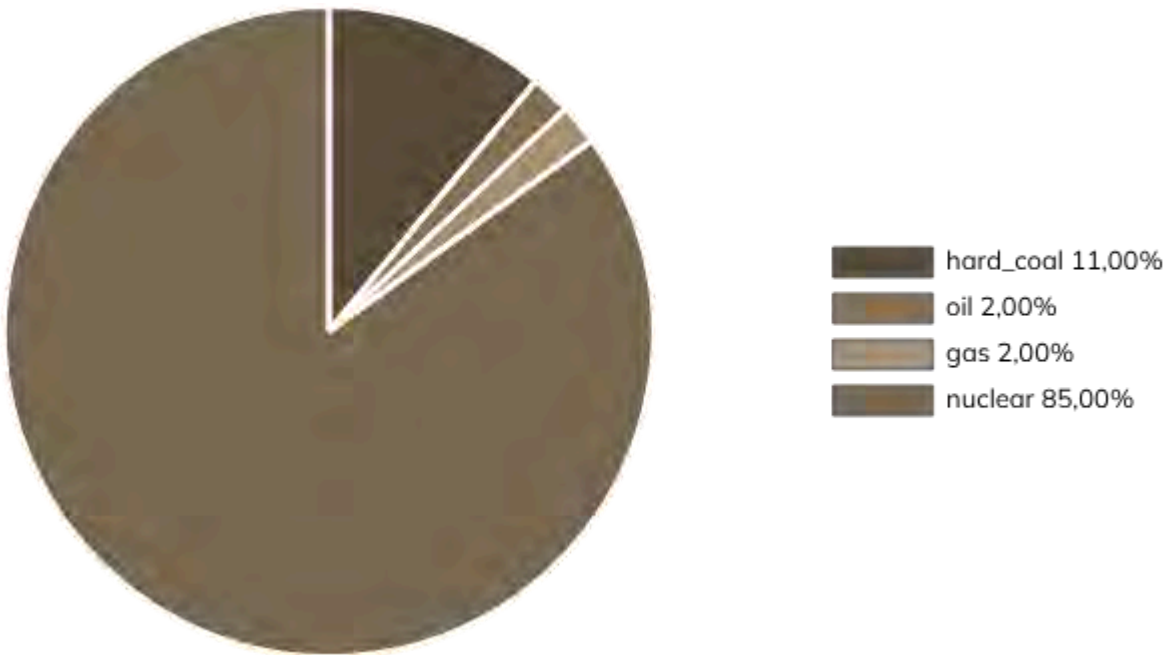
Field	Value
Declared Unit	kg
Conversion Factor to Mass	1
Time Representativeness	Data obtained refers to the year 2024
Geographical Scope	A1-A2 China, A3, C1-C4 and D Sweden
System Boundary	The system boundaries are set to be "cradle to gate" with the modules A1-A3, A4, A5, C1, C2, C3, C4, D
Excluded Modules	B1, B2, B3, B4, B5, B6, B7
Database(s) and LCA Software Used	Ecoinvent 3.11 and EandoX version 1.01
Reference Service Life (RSL)	Not applicable
Characterisation Factors Used	The characterization factors used in this study refer to PCR 2019:14 and EN 15804+A2 (based on EF 3.1).
Allocation Procedures Used	Allocation criteria are based on mass. The energy consumption has been collected and dispersed between the entire production year based on the amount of product (mass) produced for the same production year. The facilities only have one meter, so it is assumed that all supporting activities are included. Waste has been similarly allocated by mass based on the material wastage recorded from the manufacturing processes. No co-product allocations have been made. The post-consumer recycled content has impacts from transporting and waste management for the respective materials.
Cut-off criteria	The following procedures were followed for the exclusion of inputs and output: • All input and output flows in a unit process were considered i.e., considering the value of all flows in the unit process and the corresponding LCI where data was available • Data gaps were filled by conservative assumptions with average or generic data, any assumptions in such cases were documented • The use of cut-off criterion on mass inputs and primary energy at the unit process level (1 %) and at the information module level (5 %) • All hazardous and toxic materials and substances are included in the inventory and the cut-off rules do not apply

Energy Breakdown

Electricity used in the manufacturing

Energy Source	Data Source	Year	GWP excl. biogenic [kg CO2-eq/kWh]
Electricity Residual Mix - Sweden	Ecoinvent 3.11	2024	0,0855

Breakdown of electricity usage



A1	A2	A3	A4	A5	B1-7	C1-4
Extraction and processing of raw materials	Transport of raw materials	Manufacturing	Transport to end user	Installation on site	User	End of life
						
		Waste		Waste		Waste

D Benefits and loads beyond the system boundary

A1	Raw material supply	This module considers the extraction and processing of all raw materials, energy, and transportation which occur upstream to the studied manufacturing process, including packaging material. This module also includes the manufacturing of the final product.
A2	Transport	The final product is transported to a distribution center.
A3	Manufacturing	This module includes all resources used in the distribution centre.
A4	Transport	Transportation from the distribution centre to the site of the average building site. truck: 350km
A5	Construction installation	This module covers all on-site activities required to install the product into the building structure as well as the management, transport, and treatment of any installation waste or packaging residues at the construction site
B1-B7	Use stage	This module is excluded from this study.
C1	Deconstruction/Demolition	This stage includes the de-construction and/or demolition of the building.
C2	Transport	This stage represents the transport distance to the waste processing facility.
C3	Waste processing	This stage includes any waste treatment needed.
C4	Final disposal	This includes any material that is landfilled.
D	Benefits	Emission credits obtained from energy recovery and/or recycling materials.

System boundaries

	Product stage		Assembly stage			Use stage							End of life stage				Benefits & loads beyond system boundary
	Raw material supply	Transport to manufacturer	Manufacturing	Transport to building site	Installation into building	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Demolition	Transport to waste processing	Waste processing for reuse, recovery, recycling	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	X	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X
Geography	GLO	GLO	SE	-	-	-	-	-	-	-	-	-	SE	SE	SE	SE	SE
Specific data used	14,58%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-Products	< 10%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-Sites	0%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Declaration of data sources, reference years, and share of primary data

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Distribution center	Collected data	Ecoinvent 3.11	2024	Primary data	0,03%
Transportation of raw materials to manufacturing site	Collected data	Ecoinvent 3.11	2024	Primary data	3,06%
Production of product	Collected data	Ecoinvent 3.11	2024	11,84% primary data, 88,16% generic data	11,49%
Total share of primary data, of GWP-GHG results A1-A3					14,57%

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 is based on the data collected by Ahlsell AB over one year from January 2024. The EPD is based on the average of multiple products, and all the products are manufactured on a single site. The end-of-life stage is representative of the European Union. The quality of the relevant data used for the EPD in terms of its time, geography and technology representativeness using EN 15804:2012+A2;2019 is mostly very good, but only "poor" data in terms of geography was available for the fuel used in transportation. No "fair" datasets contributed more than 30% to any declared indicator, and no other "poor" or "very poor" data was used.

Transport to the building site (A4)

Vehicle type	Distance (km)	Capacity utilization* (%)	Bulk density of transported products (kg/m ³)	Volume capacity utilisation factor**
Truck-Trailer 40 tonne	350 km	61	as product density	1,00

*Including empty returns

**Factor =1 or <1 or >1 for compressed or nested packaged products

Installation of the product in the building (A5)

Scenario Information	Unit (expressed per functional unit or per declared unit)
Ancillary materials for installation (specified by material)	None
Water use	None
Other resource use	None
Quantitative description of energy type (regional mix) and consumption during the installation process	Not applicable
Direct emissions at ambient air, soil and water	None

A5 Waste materials on the building site before waste processing, generated by the product's installation (specified by type)

Name	Type	Weight	Unit (expressed per functional unit or per declared unit)
Paper	packaging	1,93E-01	kg

A5 Output materials

Name	Type	Route	Weight	Unit (expressed per functional unit or per declared unit)
Paper	product	recycling waste	1,24E-01	kg
Paper	product	incineration waste	3,09E-02	kg
Paper	product	landfill waste	3,86E-02	kg

End-of-life (C1-C4)

Scenario information	Unit (expressed per functional unit or per declared unit)
C1: Collection process specified by type	1,000 kg demolition/deconstruction of steel, wood and other materials. Energy carrier: Diesel. Quantity: 1.1 kWh/tonne
C2: Waste transport specified by type	0,933 kg materials not to be incinerated transported for 80 km 0,067 kg materials to be incinerated transported for 130 km
C3: Recovery system specified by type	0,075 kg Plastic for recycling 0,767 kg Metal for recycling 0,006 kg Rubber for recycling
C4: Disposal specified by type	0,062 kg Plastic for energy recovery 0,085 kg Metal for final disposal 0,005 kg Rubber for energy recovery
Assumptions for scenario development, e.g. transportation	The transportation is modelled with the same specifications as the truck transportation in module A4, except the transportation distance is assumed to be 80 km for materials not to be incinerated and 130 km for materials to be incinerated.

Environmental performance

Potential environmental impact – indicators according to EN 15804+A2

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).

Results per declared unit: 1 kg									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO2 eq	7,83E+00	6,45E-02	3,60E-01	3,99E-04	2,41E-02	5,12E-02	1,42E-01	-4,28E+00
GWP-fossil	kg CO2 eq	8,09E+00	6,44E-02	3,52E-02	3,99E-04	2,41E-02	4,35E-02	1,42E-01	-4,26E+00
GWP-biogenic	kg CO2 eq	-2,80E-01	7,49E-05	3,24E-01	0,00E+00	2,80E-05	7,67E-03	2,57E-05	-8,57E-03
GWP-luluc	kg CO2 eq	2,69E-02	2,13E-05	3,16E-06	4,08E-08	7,98E-06	3,30E-05	7,30E-06	-8,73E-03
ODP	kg CFC11 eq	6,79E-08	1,40E-09	2,35E-10	5,92E-12	5,25E-10	4,81E-10	3,72E-10	-3,61E-08
AP	mol H+ eq	4,11E-01	2,07E-04	6,65E-05	3,56E-06	7,74E-05	1,82E-04	6,34E-05	-2,65E-01
EP-freshwater	kg P eq	3,26E-02	4,40E-06	3,32E-06	1,28E-08	1,65E-06	1,14E-05	5,10E-06	-2,14E-02
EP-marine	kg N eq	2,47E-02	7,01E-05	1,05E-04	1,66E-06	2,62E-05	1,15E-04	2,30E-05	-1,45E-02
EP-terrestrial	mol N eq	3,25E-01	7,58E-04	2,86E-04	1,82E-05	2,83E-04	5,93E-04	1,97E-04	-1,96E-01
POCP	kg NMVOC eq	9,28E-02	3,14E-04	1,07E-04	5,43E-06	1,17E-04	1,96E-04	6,77E-05	-5,55E-02
ADP-minerals & metals*	kg Sb-Eq	5,57E-03	2,17E-07	5,45E-08	1,47E-10	8,13E-08	4,30E-07	7,11E-08	-3,69E-03
ADP-fossil*	MJ	1,04E+02	9,16E-01	1,58E-01	5,19E-03	3,43E-01	4,53E-01	1,84E-01	-5,71E+01
WDP*	m³	6,46E+00	4,90E-03	4,73E-03	1,34E-05	1,83E-03	7,50E-03	1,56E-01	-3,51E+00
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								

*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.

Use of resources

Option A has been selected in calculating the primary energy indicators. Under this option, the energy is recorded as an input in the module where it enters the product system (A1–A3) and as an equivalent output in the module where it exits the system (A5 for packaging content and C3 and/or C4 for product content), whether it is transferred to another product system or treated as waste.

Results per declared unit: 1 kg									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	2,28E+01	3,54E-01	3,17E+00	3,27E-05	1,32E-01	3,70E-02	3,51E-02	-1,30E-01
PERM	MJ	3,07E+00	0,00E+00	-3,07E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,59E+01	3,54E-01	9,43E-02	3,27E-05	1,32E-01	3,70E-02	3,51E-02	-1,30E-01
PENRE	MJ	9,69E+01	1,26E+00	1,87E-01	5,52E-03	4,69E-01	3,10E+00	2,34E+00	-1,16E+00
PENRM	MJ	4,79E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,63E+00	-2,16E+00	5,61E-01
PENRT	MJ	1,02E+02	1,26E+00	1,87E-01	5,52E-03	4,69E-01	4,66E-01	1,84E-01	-6,04E-01
SM	kg	8,64E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,22E-03
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
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
FW	m³	1,48E-02	1,14E-04	2,75E-05	1,28E-08	4,27E-05	8,94E-05	3,53E-03	2,50E-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								

Additional mandatory and voluntary impact category indicators

Results per declared unit: 1 kg									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG	kg CO ₂ eq	8,13E+00	6,45E-02	6,01E-02	3,99E-04	2,41E-02	5,12E-02	1,42E-01	-4,28E+00
PM	Disease incidence	9,64E-07	4,18E-09	1,14E-09	1,02E-10	1,56E-09	5,34E-09	4,72E-10	-6,50E-07
IRP**	kBq U235 eq.	6,51E-01	1,09E-03	4,92E-04	2,21E-06	4,08E-04	2,56E-03	1,37E-03	-4,69E-01
ETP-fw*	CTUe	5,34E+02	1,20E-01	1,85E-01	2,81E-04	4,49E-02	3,16E-01	7,20E+00	-3,83E+02
HTP-c *	CTUh	4,11E-08	1,16E-11	6,21E-12	4,07E-14	4,35E-12	4,35E-11	4,09E-11	-2,99E-08
HTP-nc*	CTUh	3,80E-06	4,96E-10	2,21E-10	6,41E-13	1,86E-10	7,60E-10	4,29E-10	-2,79E-06
SQP *	Dimensionless	1,48E+02	5,40E-01	8,69E-02	3,44E-04	2,02E-01	9,35E-01	8,74E-02	-8,73E+01
Acronyms	GWP-GHG: global warming potential - greenhouse gases; PM: particulate matter; IRP: ionizing radiation potential; ETP-fw: ecotoxicity potential - freshwater; HTP-c: human toxicity potential - cancer; HTP-nc: human toxicity potential - non-cancer; SQP: smog formation potential								

The GWP-GHG indicator is identical to GWP-total except that the characterisation factor (CF) for biogenic CO₂ is set to zero. This means that the uptake and emissions of biogenic CO₂ are "balanced out" already in modules A1-A3, instead of in modules A1-A5 (for packaging) or modules A-C (for product). In the context of Norwegian public procurement legislation, GWP-GHG is also referred to as GWP-IOBC.

**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 or 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

Waste indicators

Results per declared unit: 1 kg									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	4,40E+00	9,23E-04	3,69E-02	9,46E-04	3,45E-04	1,94E-02	1,52E-03	-1,86E-01
NHWD	kg	1,43E+01	9,93E-03	3,93E-02	3,06E-03	3,71E-03	0,00E+00	8,52E-02	-5,45E-01
RWD	kg	1,70E-04	0,00E+00	7,54E-08	5,43E-10	0,00E+00	1,16E-07	9,09E-09	-1,24E-04
Acronyms	HW: Hazardous waste disposed; NHW: Non-hazardous waste disposed; RW: Radioactive waste disposed								

Output flow indicators

Results per declared unit: 1 kg									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
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
MFR	kg	0,00E+00	0,00E+00	1,24E-01	0,00E+00	0,00E+00	8,48E-01	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
EEE	MJ	0,00E+00	0,00E+00	4,26E-02	0,00E+00	0,00E+00	0,00E+00	1,72E-01	0,00E+00
EET	MJ	0,00E+00	0,00E+00	8,80E-02	0,00E+00	0,00E+00	0,00E+00	3,85E-01	0,00E+00
Acronyms	CRU: Components for reuse; MFR: Materials for recycling; MER: Materials for energy recovery; EEE: Exported electric energy; EET: Exported thermal energy								

Information on biogenic carbon content

Parameter	Unit	Value
Biogenic carbon content in product	kg C	0,00
Biogenic carbon content in the accompanying packaging	kg C	0,08

Note: 1 kg biogenic carbon is equivalent to 44/12 kg of CO₂

Environmental impact performance from 100% scenarios

Potential environmental impact – indicators according to EN 15804+A2

Results per declared unit: 1 kg													
Indicator	Unit	C2 100% RC	C2 100% INC	C2 100% LF	C3 100% RC	C3 100% INC	C3 100% LF	C4 100% RC	C4 100% INC	C4 100% LF	D 100% RC	D 100% INC	D 100% LF
GWP-total	kg CO ₂ eq	1,52E-02	2,48E-02	1,52E-02	6,86E-02	0,00E+00	0,00E+00	0,00E+00	3,14E-01	1,89E-02	-5,45E+00	-8,10E-02	0,00E+00
GWP-fossil	kg CO ₂ eq	1,52E-02	2,47E-02	1,52E-02	6,00E-02	0,00E+00	0,00E+00	0,00E+00	3,14E-01	1,89E-02	-5,43E+00	-8,35E-02	0,00E+00
GWP-biogenic	kg CO ₂ eq	1,77E-05	2,87E-05	1,77E-05	8,52E-03	0,00E+00	0,00E+00	0,00E+00	1,62E-04	1,83E-06	-1,50E-02	1,42E-03	0,00E+00
GWP-luluc	kg CO ₂ eq	5,04E-06	8,19E-06	5,04E-06	4,77E-05	0,00E+00	0,00E+00	0,00E+00	1,55E-05	3,37E-06	-9,71E-03	1,03E-03	0,00E+00
ODP	kg CFC-11 eq	3,32E-10	5,39E-10	3,32E-10	6,62E-10	0,00E+00	0,00E+00	0,00E+00	7,94E-10	1,93E-10	-4,11E-08	-1,10E-09	0,00E+00
AP	mole H ⁺ eq	4,89E-05	7,94E-05	4,89E-05	2,46E-04	0,00E+00	0,00E+00	0,00E+00	1,32E-04	4,75E-05	-2,97E-01	-6,65E-04	0,00E+00
EP-freshwater	kg P eq	1,04E-06	1,69E-06	1,04E-06	1,51E-05	0,00E+00	0,00E+00	0,00E+00	1,12E-05	5,81E-07	-2,38E-02	-3,49E-05	0,00E+00
EP-marine	kg N eq	1,66E-05	2,69E-05	1,66E-05	1,49E-04	0,00E+00	0,00E+00	0,00E+00	4,79E-05	3,24E-04	-1,67E-02	-8,94E-05	0,00E+00
EP-terrestrial	mole N eq	1,79E-04	2,91E-04	1,79E-04	8,05E-04	0,00E+00	0,00E+00	0,00E+00	4,04E-04	2,02E-04	-2,24E-01	-8,81E-04	0,00E+00
POCP	kg NMVOC eq	7,41E-05	1,20E-04	7,41E-05	2,72E-04	0,00E+00	0,00E+00	0,00E+00	1,38E-04	7,59E-05	-6,39E-02	-2,90E-04	0,00E+00
ADP-minerals & metals	kg Sb eq	5,13E-08	8,34E-08	5,13E-08	5,41E-07	0,00E+00	0,00E+00	0,00E+00	1,56E-07	1,09E-08	-4,10E-03	-1,09E-07	0,00E+00
ADP-fossil*	MJ	2,16E-01	3,52E-01	2,16E-01	6,37E-01	0,00E+00	0,00E+00	0,00E+00	3,79E-01	1,65E-01	-7,00E+01	-2,55E+00	0,00E+00
WDP*	m ³	1,16E-03	1,88E-03	1,16E-03	1,09E-02	0,00E+00	0,00E+00	0,00E+00	3,45E-01	7,47E-03	-4,24E+00	-3,22E-02	0,00E+00
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; RC: Recycling; INC: Incineration; LF: Landfill												

- 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.

Use of resources 100% scenarios

Results per declared unit: 1 kg													
Indicator	Unit	C2 100% RC	C2 100% INC	C2 100% LF	C3 100% RC	C3 100% INC	C3 100% LF	C4 100% RC	C4 100% INC	C4 100% LF	D 100% RC	D 100% INC	D 100% LF
PERE	MJ	8,35E-02	1,36E-01	8,35E-02	4,86E-02	0,00E+00	0,00E+00	0,00E+00	7,78E-02	2,98E-01	-9,95E-01	-7,80E-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	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	8,35E-02	1,36E-01	8,35E-02	4,86E-02	0,00E+00	0,00E+00	0,00E+00	7,78E-02	2,98E-01	-9,95E-01	-7,80E-01	0,00E+00
PENRE	MJ	2,96E-01	4,82E-01	2,96E-01	5,45E+00	0,00E+00	0,00E+00	0,00E+00	5,17E+00	4,96E+00	-1,54E+01	-3,85E+00	0,00E+00
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	-4,79E+00	0,00E+00	0,00E+00	0,00E+00	-4,79E+00	-4,79E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	2,96E-01	4,82E-01	2,96E-01	6,61E-01	0,00E+00	0,00E+00	0,00E+00	3,80E-01	1,67E-01	-1,54E+01	-3,85E+00	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	-1,02E-02	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	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	0,00E+00	0,00E+00	0,00E+00
FW	m3	2,69E-05	4,38E-05	2,69E-05	9,96E-05	0,00E+00	0,00E+00	0,00E+00	7,81E-03	1,36E-04	-1,52E-03	-7,44E-06	0,00E+00
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; LF: Landfill; RC: Recycling; INC: Incineration												

Additional voluntary indicators 100% scenarios

Results per declared unit: 1 kg													
Indicator	Unit	C2 100% RC	C2 100% INC	C2 100% LF	C3 100% RC	C3 100% INC	C3 100% LF	C4 100% RC	C4 100% INC	C4 100% LF	D 100% RC	D 100% INC	D 100% LF
GWP-GHG	kg CO ₂ eq	1,52E-02	2,48E-02	1,52E-02	6,86E-02	0,00E+00	0,00E+00	0,00E+00	3,14E-01	1,89E-02	-5,45E+00	-8,26E-02	0,00E+00
PM	Disease incidence	9,86E-10	1,60E-09	9,86E-10	8,54E-09	0,00E+00	0,00E+00	0,00E+00	8,63E-10	1,07E-09	-7,56E-07	-6,72E-09	0,00E+00
IRP **	kBq U235 eq.	2,58E-04	4,19E-04	2,58E-04	3,18E-03	0,00E+00	0,00E+00	0,00E+00	3,02E-03	1,43E-04	-5,13E-01	-1,37E-01	0,00E+00
ETP-fw*	CTUe	2,84E-02	4,61E-02	2,84E-02	4,32E-01	0,00E+00	0,00E+00	0,00E+00	1,60E+01	4,97E-02	-4,34E+02	-1,54E-01	0,00E+00
HTP-c *	CTUh	2,74E-12	4,46E-12	2,74E-12	6,58E-11	0,00E+00	0,00E+00	0,00E+00	9,06E-11	1,57E-12	-3,33E-08	-9,82E-12	0,00E+00
HTP-nc*	CTUh	1,17E-10	1,91E-10	1,17E-10	1,02E-09	0,00E+00	0,00E+00	0,00E+00	9,48E-10	1,02E-10	-3,10E-06	-5,18E-10	0,00E+00
SQP*	Dimensionless	1,28E-01	2,07E-01	1,28E-01	1,16E+00	0,00E+00	0,00E+00	0,00E+00	1,37E-01	3,41E-01	-9,71E+01	-1,87E-01	0,00E+00
Acronyms	GWP-GHG: global warming potential - greenhouse gases; PM: particulate matter; IRP: ionizing radiation potential; ETP-fw: ecotoxicity potential - freshwater; HTP-c: human toxicity potential - cancer; HTP-nc: human toxicity potential - non-cancer; SQP: smog formation potential; LF: Landfill; RC: Recycling; INC: Incineration												

The GWP-GHG indicator is identical to GWP-total except that the characterisation factor (CF) for biogenic CO₂ is set to zero. This means that the uptake and emissions of biogenic CO₂ are "balanced out" already in modules A1-A3, instead of in modules A1-A5 (for packaging) or modules A-C (for product). In the context of Norwegian public procurement legislation, GWP-GHG is also referred to as GWP-IOBC.

**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 or 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

Waste indicators 100% scenarios

Results per declared unit: 1 kg													
Indicator	Unit	C2 100% RC	C2 100% INC	C2 100% LF	C3 100% RC	C3 100% INC	C3 100% LF	C4 100% RC	C4 100% INC	C4 100% LF	D 100% RC	D 100% INC	D 100% LF
HWD	kg	2,18E-04	3,54E-04	2,18E-04	3,53E-02	0,00E+00	0,00E+00	0,00E+00	3,38E-03	3,53E-02	-2,10E-01	-2,20E-02	0,00E+00
NHWD	kg	2,34E-03	3,81E-03	2,34E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,65E-01	-6,83E-01	-8,20E-02	0,00E+00
RWD	kg	0,00E+00	0,00E+00	0,00E+00	2,10E-07	0,00E+00	0,00E+00	0,00E+00	2,02E-08	1,47E-08	-1,33E-04	-1,05E-05	0,00E+00
Acronyms	HW: Hazardous waste disposed; NHW: Non-hazardous waste disposed; RW: Radioactive waste disposed; LF: Landfill; RC: Recycling; INC: Incineration												

Output flow indicators 100% scenarios

Results per declared unit: 1 kg													
Indicator	Unit	C2 100% RC	C2 100% INC	C2 100% LF	C3 100% RC	C3 100% INC	C3 100% LF	C4 100% RC	C4 100% INC	C4 100% LF	D 100% RC	D 100% INC	D 100% LF
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	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	1,00E+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
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	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	3,82E-01	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	8,56E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	CRU: Components for reuse; MFR: Materials for recycling; MER: Materials for energy recovery; EEE: Exported electric energy; ETE: Exported thermal energy; LF: Landfill; RC: Recycling; INC: Incineration												

Impact Indicators Variation

LCA result of one declared unit product (A-C)	Unit	Min	Representative Average	Max
GWP-total	kg CO2 eq.	0%	7,83E+00	0%
GWP-fossil	kg CO2 eq.	0%	8,09E+00	0%
GWP-GHG	kg CO2 eq.	0%	8,13E+00	0%
GWP-biogenic	kg CO2 eq.	0%	-2,80E-01	0%
GWP-luluc	kg CO2 eq.	0%	2,69E-02	0%
ODP	kg CFC-11 eq.	0%	6,79E-08	0%
AP	Mole of H+ eq.	0%	4,11E-01	0%
EP-freshwater	kg P eq.	0%	3,26E-02	0%
EP-marine	kg N eq.	0%	2,47E-02	0%
EP-terrestrial	Mole of N eq.	0%	3,25E-01	0%
POCP	kg NMVOC eq.	0%	9,28E-02	0%
ADP-M&M	kg Sb eq.	0%	5,57E-03	0%
ADP-fossil	MJ	0%	1,04E+02	0%
WDP	m³ world equiv.	0%	6,46E+00	0%

Disclaimers

ILCD classification	Indicator	Disclaimer
ILCD Type 1	Global warming potential (GWP)	None
ILCD Type 1	Depletion potential of the stratospheric ozone layer (ODP)	None
ILCD Type 2	Acidification potential, Accumulated Exceedance (AP)	None
ILCD Type 2	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
ILCD Type 2	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
ILCD Type 2	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
ILCD Type 2	Formation potential of tropospheric ozone (POCP)	None
ILCD Type 3	Abiotic depletion potential for non-fossil resources (ADP-minerals & metals)	1
ILCD Type 3	Abiotic depletion potential for fossil resources (ADP-fossil)	1
ILCD Type 3	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	1
Disclaimer 1 – 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.		
Note 1: 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.		
Note 2: The results presented for modules A1-A3 alone shall not be used for comparisons unless all relevant life cycle stages, particularly end-of-life (C1-C4), are included. This ensures a more accurate and representative environmental impact assessment over the full product life cycle.		

Abbreviations

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	CLC	Co-location centre
CPC	Central Product Classification	GHS	Globally harmonized system of classification and labelling of chemicals
GRI	Global Reporting Initiative		

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-luluc	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)

Abbreviations continued

Waste Indicators

HW Hazardous Waste (disposed) (kg)

RW Radioactive Waste (disposed) (kg)

NHW Non-Hazardous Waste (disposed) (kg)

Output Flow Indicators

CFR Components for Reuse (kg)

MER Materials for Energy Recovery (kg)

EET Exported Energy, Thermal (MJ)

MR Material for Recycling (kg)

EEE Exported Energy, Electricity (MJ)

Lifecycle Stages / Modules

A1 Raw material supply

A3 Manufacturing

A5 Construction/Installation

B2 Maintenance

B4 Replacement

B6 Operational energy use

C1 Deconstruction/Demolition

C3 Waste processing

D Reuse-Recovery-Recycling potential

A2 Transport

A4 Transport to site

B1 Use

B3 Repair

B5 Refurbishment

B7 Operational water use

C2 Transport to waste processing

C4 Disposal

Other Relevant Terms

SVHC Substances of Very High Concern

CAS No. Chemical Abstracts Service Number

kg Kilogram

NMVOC Non-Methane Volatile Organic Compounds

RC Recycling

P eq. Phosphorus Equivalents

CFC-11 eq. Chlorofluorocarbon-11 Equivalents

kg C Kilograms of Carbon

ND Not Declared

MND Module not declared

EC No. European Community Number

MJ Megajoule

m³ Cubic Meter

Sb eq. Antimony Equivalents

LF Landfill

N eq. Nitrogen Equivalents

CO₂ eq. Carbon Dioxide Equivalents

kg CO₂ eq. Kilograms of Carbon Dioxide Equivalent

INC Incineration

References

- EN 15804:2012+A2
Sustainability of construction works – Environmental product declaration – Core rules for the product category of constructions products
- EPD International (2026)
PCR 2019:14. Construction products and construction services (EN 15804:A2). V2.0.1.
- EPD International (2026)
General Programme Instructions of the International EPD System, version 5.0.1
- ISO 14020:2022
International Standard ISO 14020 – Environmental statements and programmes for products – Principles and general requirements
- 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
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Version history

Original Version of the EPD

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