

# Environmental Product Declaration



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

## ***Snap tie in iron***

from

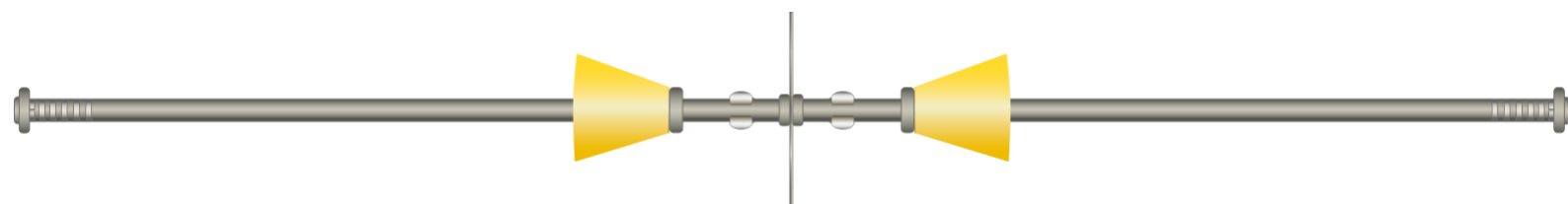
**Allform Sweden AB**



Programme:	The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a>
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0008160
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***EPD of multiple products based on representative product. The included products are described in product information.***

*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

### Programme information

<b>Programme:</b>	The International EPD® System
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<b>Accountabilities for PCR, LCA and independent, third-party verification</b>
<b>Product Category Rules (PCR)</b>
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): <i>Construction Products PCR 2019:14 version 1.3.4</i>
PCR review was conducted by: <i>The Technical Committee of the International EPD System. See <a href="http://www.environdec.com">www.environdec.com</a> for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat <a href="http://www.environdec.com/contact">www.environdec.com/contact</a>.</i>
<b>Life Cycle Assessment (LCA)</b>
LCA accountability: <i>Anna Liljenroth, CarbonZero AB</i>
<b>Third-party verification</b>
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
<input checked="" type="checkbox"/> EPD verification by individual verifier
Third-party verifier: <i>Sigita Židonienė, Vesta Consulting</i>
Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same 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 equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

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## Company information

### Owner of the EPD:

Allform Sweden AB

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Responsible person: Sebastian Fornas, [sebastian@allform.se](mailto:sebastian@allform.se)

Description of the organisation: Allform Sweden AB is a company that offers complete solutions for castings of floors and valves as well as delivering products within the segment of concrete complements to the construction sector.

Name and location of production site: Hillerstorp, Sweden

## Product information

Product name: Snap tie in iron

Product description: Snap ties to hold loose formwork together. Provides the right width of the concrete wall and hold a form pressure guaranteed to 18 kN.

Description of production process: The entire production of the snap ties occurs in Hillerstorp, Sweden and the iron thread is delivered from the supplier Gunnars Tråd located in the same building. The production process involves thread pulling, and assembly of thread, sealing brick and plastic cones before the products are packed for delivery to Sweden.

UN CPC code: 4124 – Bars and rods, hot-rolled, of iron or steel

Geographical scope: Sweden

### Products included:

The snap ties in iron are made according to customer requirements and are available in all possible dimensions and with or without the sealing brick. To make an EPD of this product, the two most sold configurations were selected for calculations, since most of the products will belong to this range. The most sold configuration 8KV25 was used as the representative product.

The included variants are the following:

- 8PKV15
- 8KV25 (representative product)

## LCA information

Declared unit: 1 kg of snap tie in iron

Reference service life: Not applicable

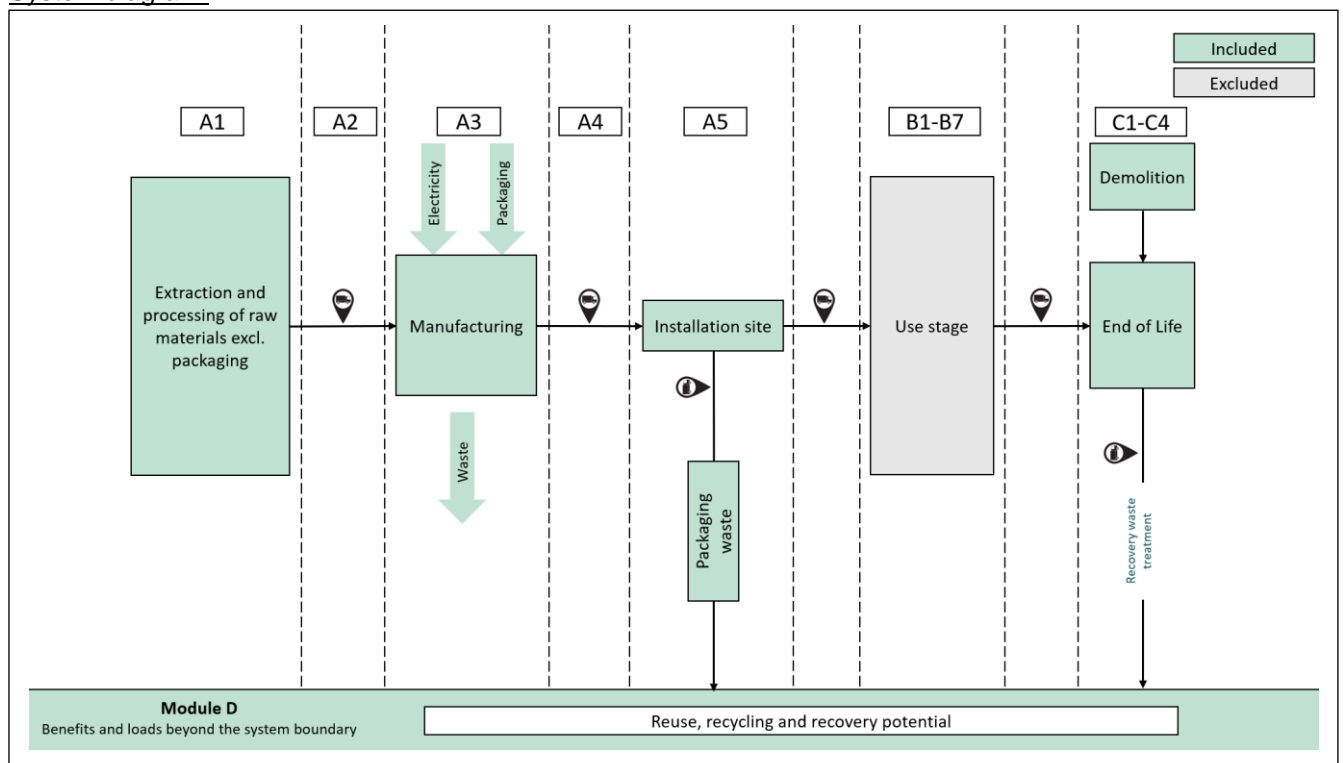
Time representativeness: 2023

Database(s) and LCA software used: Calculation completed in LCA for Experts v.10.9.0.31, with the database version 2024.1 and with some ecoinvent datasets (version 3.9.1). The characterization factors used in this study refer to PCR 2019:14 and EN 15804+A2 (based on EF 3.1).

Description of system boundaries:

Cradle to gate with options, modules C1–C4, module D, and optional modules (A1–A3 + C + D and additional modules A4+A5).

System diagram:



More information – methodology and assumptions:

### **A1 – Raw material supply**

This module considers the extraction and processing of all raw materials, energy, and transportation that occurs upstream of the studied manufacturing process. The products are made from iron thread, a sealing brick in steel and a plastic cone in recycled PP.

### **A2 – Transport to the manufacturer**

This module includes the transportation of raw materials to the manufacturing site. Specific information from the manufacturer was obtained regarding the transportation distance between the suppliers to the manufacturing factory

### **A3 - Manufacturing**

This module includes all resources used during the production of the snap ties mainly electricity and it also includes the production of packaging material in which the products are transported to costumers. The manufacturer has collected data from the production year of 2023. As there's only one manufacturing site, no variation in production sites occurs. The manufacturing energy is described in "Additional requirements section".

### **A4 – Transport**

Since Allform Sweden are selling to wholesalers, the average distance to the most used wholesalers are used.

#### **Transport to the building site**

Scenario information	Unit per declared unit
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long-distance truck, boat, etc.	Truck-trailer, Euro 0 - 6 mix, < 40t gross weight
Distance	285 km
Capacity utilisation (including empty returns)	61%
Volume capacity utilisation factor (factor: =1 or <1 or ≥ 1 for compressed or nested packaged products)	Not applicable

### **A5 – Construction installation**

During the installation, only a part of the product (25%) is casted into the wall. This means 25% of the weight of the wire and the sealing brick. There is also a large share that will remain outside of the wall and thereby needs to be broken off, this amount is approximated to 75% of the wire for this product. The plastic cones are also removed in this stage. The part of the snap tie outside of the wall is broken off by hand. Thereby no extra energy is consumed during this stage, but waste is generated and treated. The packaging of the product is also waste treated at this stage.

The following disposal routes were used for packaging (cardboard) and the product waste (steel and plastic) based on Swedish statistics (2020).

Material	Recycling rate	Incineration rate	Landfill rate
Corrugated board	0%	100%	0%
Plastic	26%	74%	0%
Steel	100%	0%	0%

Scenario information	Unit per declared unit
Ancillary materials for installation	None
Water use	None
Other resource use	None
Quantitative description of energy type (regional mix) and consumption during the installation process	Not applicable
Waste materials on the building site before waste processing, generated by the product's installation (specified by type)	0.745 kg steel (product) 0.042 kg polypropylene (product) 0.064 kg corrugated board (packaging)
Output materials (specified by type) as result of waste processing at the building site e.g. of collection for recycling, for energy recovery (specified by route)	0.745 kg steel (product) to recycling 0.0311 kg polypropylene (product) to energy recovery 0.0109 kg polypropylene (product) to recycling 0.064 corrugated board (packaging) to energy recovery
Direct emissions to ambient air, soil and water	None

A transportation of 100 km has been considered for the waste occurring in A5.

### **B1-B7 – Use stage**

This stage is not declared.

### **C1 Deconstruction/Demolition**

This stage includes deconstructing the product when it is no longer in use. This means demolishing the concrete wall/concrete application when it is no longer needed. This work is estimated with an excavator.

### **C2 Transport**

This module represents the transport distance to the waste processing facility. It is assumed that the transportation distance to the waste processing facility is 50 km.

### **C3 Waste processing**

This module includes any waste treatment needed. Swedish statistics assign the different materials to the appropriate waste treatment process. Important to keep in mind here is that a large part of the product is already waste treated in module A5.

The following waste treatment rates were used. In C3 a process accounted for the remelting of steel was considered.

Material	Recycling rate	Incineration rate	Landfill rate
Steel	100%	0%	0%

Process	Unit (expressed per declared unit)
Collection process specified by type	0,21 kg collected separately
	0 kg collected with mixed construction waste
Recovery system specified by type	0 kg for re-use
	0,21 kg steel for recycling
Disposal specified by type	0 kg material for final deposition
Assumptions for scenario development, e.g. transportation	The transportation is modelled with the same specification as the truck transportation in module A2, except for the transportation distance that is set to 50 km.

#### **C4 Disposal**

This module includes any material that is landfilled or incineration with an efficiency lower than 60%. For this product, there is no impact associated with module C4, since the recycling of steel is accounted for in module C3.

#### **D Benefits and loads beyond the system boundary**

This module includes loads and benefits obtained from energy recovery and or recycling materials. For this product, it is the recycling of metals that leads to recovered metals so that the production of virgin metal is avoided. Furthermore, incineration of plastics leads to energy being recovered.

#### **Infrastructure**

Plants, machine production and transportation systems are excluded from the calculations. However, electricity is one such input for which it is not possible to exclude the impact from infrastructure already included in the dataset, but no data on infrastructure has been manually added to the product system.

#### **Cut-off criteria**

The following procedures were followed for the exclusion of inputs and outputs

- All input and output flows in a unit process were considered i.e., taking into account the value of all flows in the unit process and the corresponding LCI where data was available
- Processes of infrastructure or capital goods are excluded from this study (except when it is already included in a dataset used)
- Generic national data was used for modules C1-C4 and D as no specific data was able to be collected
- 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%) was applied

No hazardous and toxic materials or Substances of Very High Concern (SVHC) according to REACH is included in the inventory and the cut-off rules do not apply.

#### **Allocation**

Allocation criteria are based on mass. It was assumed that the manufacturing data is evenly distributed throughout the products, therefore all the inputs and outputs in module A3 are divided by the total weight of the products produced during the reference year.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	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	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	SE	SE	SE	SE	SE	-	-	-	-	-	-	-	SE	SE	SE	SE	SE
Specific data used	1.6%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	2%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-



## Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/ declared unit
Hot rolled steel wire	0,854	46	0 resp. 0
Hot rolled steel strip	0,104	0	0 resp. 0
Polypropylene	0,042	100	0 resp. 0
TOTAL	1,000	43	0 resp. 0
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/ declared unit
Corrugated board	0,064	6,4	0,028
TOTAL	0,064	6,4	0,028

The content declaration shows the content of the representative product, as suggested in PCR.

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Mass-% per functional or declared unit
Not relevant.			

## Results of the environmental performance indicators

The estimated impact results in this section are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. Furthermore, the results of the end-of-life stage (module C) should be considered when using the results of the production stage (modules A1-A3).

### Mandatory impact category indicators according to EN 15804

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	1,57E+00	2,38E-02	3,31E-01	1,66E-04	1,00E-03	6,36E-02	0,00E+00	-8,96E-01
GWP-biogenic	kg CO <sub>2</sub> eq.	-9,60E-02	7,37E-05	1,02E-01	5,06E-07	3,10E-06	6,98E-04	0,00E+00	1,47E-04
GWP-luluc	kg CO <sub>2</sub> eq.	7,51E-04	3,90E-04	1,59E-04	2,68E-06	1,64E-05	1,31E-05	0,00E+00	-1,17E-04
GWP-total	kg CO <sub>2</sub> eq.	1,48E+00	2,43E-02	4,33E-01	1,69E-04	1,02E-03	6,43E-02	0,00E+00	-8,96E-01
ODP	kg CFC 11 eq.	2,78E-12	3,42E-15	3,60E-11	2,35E-17	1,44E-16	1,36E-12	0,00E+00	1,05E-12
AP	mol H <sup>+</sup> eq.	3,61E-03	3,04E-05	6,52E-04	8,23E-07	1,28E-06	1,71E-04	0,00E+00	-2,12E-03
EP-freshwater	kg P eq.	1,91E-06	9,91E-08	1,55E-06	6,81E-10	4,17E-09	2,77E-07	0,00E+00	-2,70E-07
EP-marine	kg N eq.	7,98E-04	1,12E-05	1,73E-04	3,88E-07	4,71E-07	4,41E-05	0,00E+00	-3,47E-04
EP-terrestrial	mol N eq.	8,50E-03	1,30E-04	1,87E-03	4,30E-06	5,49E-06	4,68E-04	0,00E+00	-3,13E-03

POCP	kg NMVOC eq.	2,93E-03	3,09E-05	6,51E-04	1,10E-06	1,30E-06	1,71E-04	0,00E+00	-1,39E-03
ADP-minerals&metals*	kg Sb eq.	4,29E-07	2,02E-09	6,14E-08	1,39E-11	8,51E-11	1,32E-08	0,00E+00	-4,84E-06
ADP-fossil*	MJ	1,72E+01	3,06E-01	3,07E+00	2,10E-03	1,29E-02	8,32E-01	0,00E+00	-9,47E+00
WDP*	m <sup>3</sup>	4,43E-02	3,59E-04	3,02E-02	2,47E-06	1,51E-05	2,68E-03	0,00E+00	-6,09E-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								

\* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

### Additional mandatory and voluntary impact category indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG <sup>1</sup>	kg CO <sub>2</sub> eq.	1,58E+00	2,43E-02	3,34E-01	1,69E-04	1,02E-03	6,43E-02	0,00E+00	-8,96E-01
PM	Disease incidence	1,38E-07	3,02E-10	9,45E-09	9,82E-12	1,27E-11	2,44E-09	0,00E+00	-2,00E-08
IRP <sup>**</sup>	kBq U235 eq.	1,93E-02	8,08E-05	2,22E-02	5,55E-07	3,40E-06	6,24E-03	0,00E+00	6,58E-03
ETP-fw*	CTUe	2,37E+00	2,27E-01	9,79E-01	1,56E-03	9,55E-03	2,51E-01	0,00E+00	-4,64E-01
HTTP-c*	CTUh	7,72E-10	4,58E-12	1,11E-10	3,15E-14	1,93E-13	2,85E-11	0,00E+00	3,35E-10
HTTP-nc*	CTUh	4,01E-09	2,06E-10	6,19E-09	1,42E-12	8,66E-12	1,74E-09	0,00E+00	1,53E-09
SQP*	Dimensionless	3,49E+00	1,50E-01	1,65E+00	1,03E-03	6,33E-03	4,49E-01	0,00E+00	-3,26E-01

\* 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.

\*\* 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.

<sup>1</sup> 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 CO<sub>2</sub> is set to zero.

## Resource use indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	9,39E+00	2,63E-02	2,31E+00	1,81E-04	1,11E-03	6,58E-01	0,00E+00	-1,04E-01
PERM	MJ	9,60E-01	0,00E+00	-9,60E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,04E+01	2,63E-02	1,35E+00	1,81E-04	1,11E-03	6,58E-01	0,00E+00	-1,04E-01
PENRE	MJ	1,54E+01	3,06E-01	3,07E+00	2,10E-03	1,29E-02	8,32E-01	0,00E+00	-9,47E+00
PENRM	MJ	1,81E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,81E+00	0,00E+00	0,00E+00
PENRT	MJ	1,72E+01	3,06E-01	3,07E+00	2,10E-03	1,29E-02	-9,74E-01	0,00E+00	-9,47E+00
SM	kg	9,94E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4.92E-01
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	m <sup>3</sup>	2,16E-02	2,93E-05	1,51E-03	2,02E-07	1,23E-06	2,90E-04	0,00E+00	-8,69E-02
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 resources; 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

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	3,43E-08	1,17E-11	5,28E-09	8,04E-14	4,93E-13	1,51E-09	0,00E+00	-6,42E-08
Non-hazardous waste disposed	kg	2,42E-02	4,99E-05	3,43E-03	3,43E-07	2,10E-06	5,10E-05	0,00E+00	1,02E-01
Radioactive waste disposed	kg	7,78E-05	5,57E-07	2,09E-04	3,83E-09	2,34E-08	5,92E-05	0,00E+00	-1,08E-04

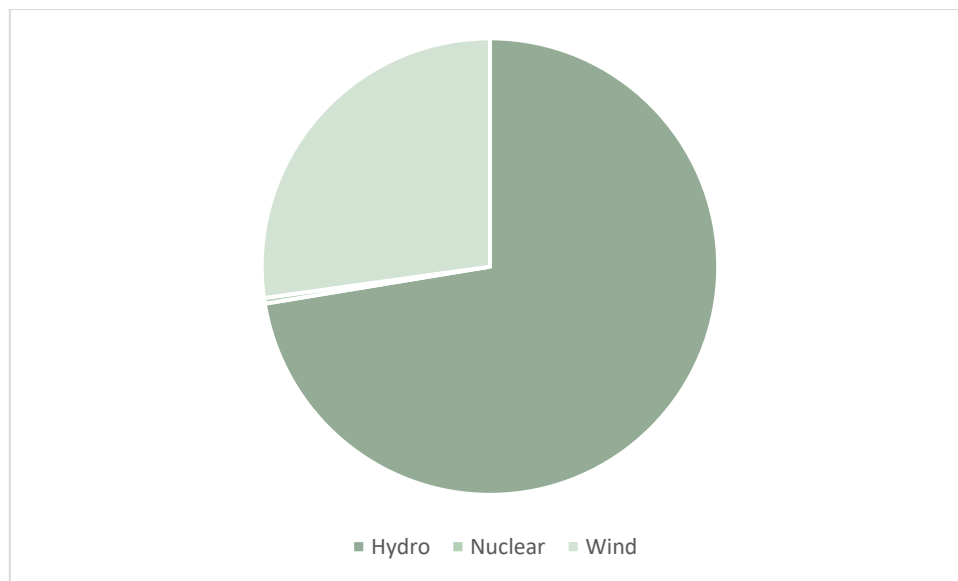
## Output flow indicators

Indicator	Unit	A1-A3	A4	A5	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	0,00E+00	0,00E+00
Material for recycling	kg	1,41E-01	0,00E+00	7,55E-01	0,00E+00	0,00E+00	2,14E-01	0,00E+00	0,00E+00
Materials for energy recovery	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
Exported energy, electricity	MJ	0,00E+00	0,00E+00	3,45E-01	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	6,18E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

## Additional requirements

### *Electricity mix from the use of electricity in manufacturing.*

In the manufacturing step, Allform purchases a specific electricity mix from Värnamo Energi, comprising of hydro power, wind power and a little share of nuclear. The climate impact (GWP-GHG) of the used electricity mix is 0.013 kg CO<sub>2</sub>-eq per kWh, the reference year of the datasets are 2020 and the mix is valid for 2023.



***Allform's electricity mix***



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## References

Construction Products PCR 2019:14 version 1.3.4	EPD International (2024) PCR 2019:14 Construction products and construction services, version 1.3.4
EN 15804:2012+A2:2019	Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products
GPI 4.0	General Programme Instructions of the International EPD® System. Version 4.0.
ISO 14020:2000	Environmental labels and declarations — General principles
ISO 14025:2010	Environmental labels and declarations - Type III environmental declarations - Principles and procedures
ISO 14044:2006	Environmental management - Life cycle assessment - Requirements and guidelines
LCA report	LCA report for Snap ties/rebars/threaded rods (Liljenroth, Stockwell), March 2025.
SCB – Swedish Statistics	(2020) Treated waste by treatment category and waste category. Every second year 2010 – 2020 <a href="https://www.statistikdatabasen.scb.se/pxweb/en/ssd/START_MI_MI0305/MI0305T003/">https://www.statistikdatabasen.scb.se/pxweb/en/ssd/START MI MI0305/MI0305T003/</a> Assessed 2025-02-11.

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