Environmental Product Declaration

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

Natre Klassisk

- Balcony door

From

Programme:	The International EPD® System, www.environdec.com
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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
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Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): *PCR 2019:14 Construction products (EN 15804:A2)(1.3.2)* *PCR 2019:14-c-PCR-007 c-PCR-007 Windows and doors (EN 17213) (2020-04-09)*
PCR review was conducted by: The *Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review Chair: Claudia A. Peña, University of Conceptción, Chile The review panel may be contacted via the Secretariat www.environdec.com/contact.*
Life Cycle Assessment (LCA)
LCA accountability: *Tyréns Sverige AB*
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: Daniel Böckin, Miljögiraff AB 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 registered in different EPD programs, 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 characterization factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD:
Natre Vinduer AS, Engenvegen 1, 2827 Hunndalen

Contact:
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Description of the organisation:
Natre Vinduer AS is among the foremost window and door manufacturers in Norway and is the largest supplier of windows and doors for Norwegian homes, distributed through builders' merchants. Natre is celebrated for its superior product quality, professionalism, reliable supply, and a widely recognised and highly regarded sales and service network spanning the country. Originating from Gjøvik, Natre traces its roots back to the 1950s and currently operates two factories that manufacture windows, balcony doors, and sliding doors, all designed to be energy efficient and featuring a diverse selection of special glass.
Natre is a part of DOVISTA, that is one of the leading manufacturers of facade windows and doors in Europe. DOVISTA is a part of the VKR Group.
Natre is a trademark used under license by DOVISTA A/S. Natre CVR-no. 988 357 995.

Product-related or management system-related certifications:
At the Gjøvik factory, we have certified our quality management system according to the requirements of Norwegian Door and Window Control (NDVK). Our focus areas are assessed and certified independently by NDVK.

Name and location of production site(s):
Natre Vinduer AS, Engenvegen 1, NO-2827 Hunndalen

Product information

Product name: Natre Klassisk Balcony door

Product description:
Natre Klassisk Balcony door are stylish and sophisticated doors with 3-layer glass in wood/aluminium. The doors are all custom-made and are available in several designs. The slim frame maximizes natural daylight, and whether used in a continuous row or as individual units, NATRE Klassisk Balcony door make a valuable contribution to a modern style.

NATRE Klassisk Balcony door are suitable for commercial buildings, apartment buildings and private projects. NATRE Klassisk Balcony are made to the customer’s specifications, have excellent drainage, and are delivered fully painted from the factory. They are manufactured in accordance with EN 14351-1-2006+A2 2016+NA 2017.

Opening functions are tested according to and third-party verified for:
-Resistance to wind load (Test: EN 12211:2016, Classification: EN 12210:2016)
-Watertightness (Test: EN 1027:2016, Classification: EN 12208:1999)
-Air permeability (Test: EN 1026:2016, Classification: EN 12207:2016)
-Impact strength (EN 13049:2023)
-Thermal transmittance (EN ISO 10077-2:2017)
-Acoustic performance rating (EN ISO 10140-2:2021)

We use pine from Northern European forests for frames, sashes/casements, glazing bars, mullions, and transoms. All suppliers are certified according to FSC and/or PEFC.
We use a water-based diffusion open surface treatment of the wood, called system 2ØKO from TEKNOS Norge AS.

Approach to chemicals (hazardous substances)
When it comes to hazardous substances, we prioritize environmental protection. Our suppliers must ensure that their products comply with relevant legislation. To be approved as one of our suppliers, the supplier must sign our code of conduct and comply with our restrictions on hazardous substances. Our restrictions prohibit products that contain hazardous substances in concentrations that exceed the maximum values listed in the applicable relevant laws, as well as products that exceed the maximum concentration values limited by DOVISTA's internal requirements.

Our Hazardous Substances Restrictions Appendix A list (https://dovista.com/interesseret/leverandoer/hazardous-substances-restriction/) does not allow neither products that contain restricted substances in concentrations that exceed the maximum concentration values listed in applicable Relevant Laws, nor products that exceed the maximum concentration values restricted due to DOVISTA's internal requirements.

Our Appendix A list, that is regularly updated according to Relevant Laws, contains Material / Chemical substances related to the following regulations and directives:

-REACH Registration, Evaluation and Authorisation of Chemicals (REACH) European Union (1907/2006/EC) (annex XIV, annex XVII and candidate list). The candidate list may be found at Candidate List of substances of very high concern for Authorisation (https://echa.europa.eu/candidate-list-table)
-Restrictions of Hazardous Substances (RoHS) European Union (65/2011/EU)
-Battery Directive (2006/66/EC)
-Packaging and Packaging Waste Directive (EU) 2018/852 + (94/62/EC)
-CLP Regulation (EC) No 1272/2008 (Regulation on classification, labelling and packaging of substances and mixtures (EC) No 1272/2008)
-Biocidal Product Regulation (528/2012/EU)
-Substances that deplete the ozone layer Regulation (1005/2009/EC)
-Persistent Organic Pollutants Regulation (2019/1021/EU) + (2020/1021/EU)
-Conflict Minerals (EU) 2017/821) + (EU) 2019/821

UN CPC code: 54

Geographical scope:
Module A1 and A2 Material suppliers are Global
Module A3 production is located in Norway
Module A5, B, C and D scenarios are for Europe

LCA information

Functional unit / declared unit: 1 m^2

Conversion factor for the product is 35.4 kg per m^2

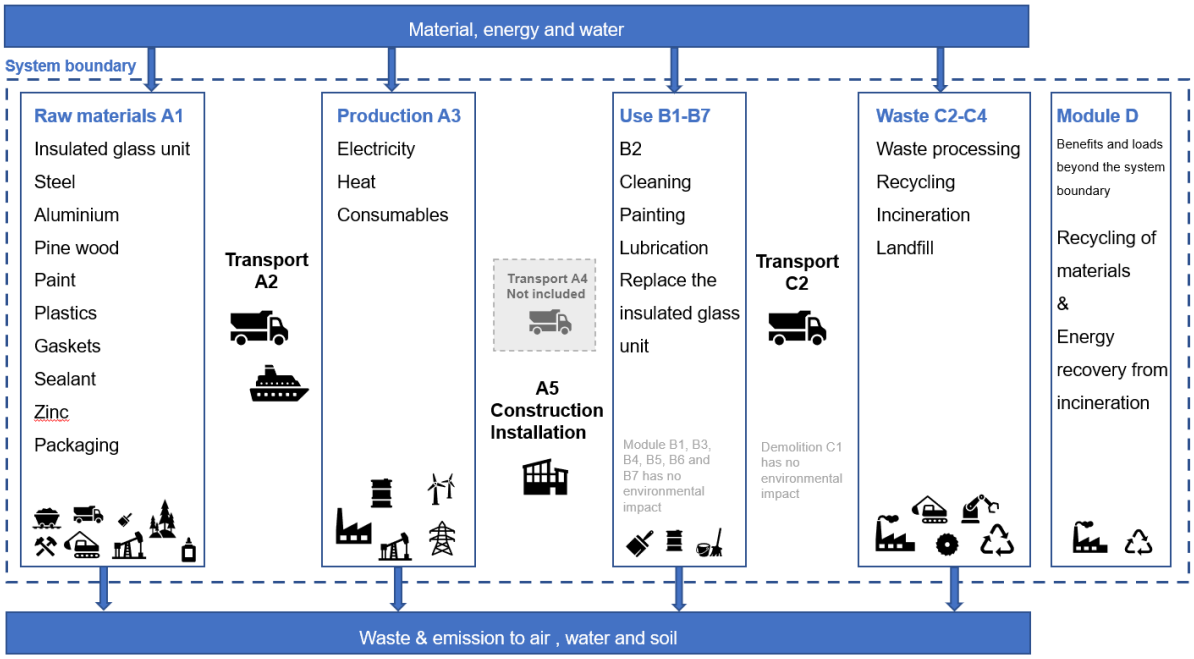
Reference service life: 50 years

Time representativeness: The LCA is based on production data from 2023 but is deemed to be representative of an average year of production.

Database(s) and LCA software used: The LCA software is SimaPro Flow and the database is Ecoinvent 3.9.1. When modelling in Simapro, Ecoinvent data (updated November 2022) has been used for generic data.

Description of system boundaries:
Cradle-to-gate with modules C1-C4, module D and optional modules A5 and B2

System diagram:



Production
Manufacturing process:
Main materials used for production:
• Wood: Main raw material is finger-jointed and glued pine scantlings supplied by FSC/PFEC certified suppliers.
• Aluminium: Extruded profiles are produced in Norway. Then profiles are either powder-coated in Poland or anodized in Norway.
• Glass: The Insulation Glass Units are purchased ready-made from supplier in Europe.
• Paint: Water-based paint that can be tinted into approximately 1850 colours, incl. clear lacquer.

Wood waste is utilized internally in bio stoves, that supply heat for both process and heating needs. All aluminium waste is sent for recycling.

All raw materials are processed in production facilities in Hunndalen, Norway.

Manufacturing process consists of:

• Frame production. Wood material is profiled, milled, impregnated, and painted. Aluminium profiles are cut to length, milled/stamped and assembled to a frame cladding.

• Sash production. Wood material is profiled, milled, impregnated, and painted. Aluminium profiles are cut to length, milled/stamped and assembled to a sash cladding.

• Final assembly. Frames and sashes are assembled into complete door, and adjusted in a way that prevents the need for further adjustments during installation.

• Packaging. Doors are then protected with cardboard corners and packed on wooden pallets, secured by wooden planks. Pallets are wrapped with plastic foil, to protect the products from environmental elements during transport and storage at construction sites.

• Shipping. Doors are transported by trucks to distribution centres in Norway, where they are bundled and sent to final customers.

More information:

This EPD is generated with a pre-verified EPD tool. All processes are fixed and variable input data for each door i.e constituent material/components (Items) is governed by a menu. The results of the EPD are checked for plausibility. The review of the EPD-generator its constituent processes and the fixed content of the EPD is accepted based on the verification of the tool and the first EPD verification by the tool. Identification name and version number of the EPD-generator: Dovista EPD-generator 3.0.

The infrastructure or capital goods used in the product system for underlying processes are included, as infrastructure or capital goods can NOT be excluded in SimaPro FLOW. Therefore results of the impact categories abiotic depletion of minerals and metals, land use, human toxicity (cancer), human toxicity, noncancer and ecotoxicity (freshwater) may be highly uncertain in LCAs that include capital goods/infrastructure in generic datasets, in case infrastructure/capital goods contribute greatly to the total results. This is because the LCI data of infrastructure/capital goods used to quantify these indicators in currently available generic datasets sometimes lack temporal, technological and geographical representativeness. Caution should be exercised when using the results of these indicators for decision-making purposes.

Results for the additional impact categories particulate matter, ionising radiation, ecotoxicity (freshwater), human toxicity (cancer), human toxicity (non-cancer) and land use is not declared.

EN 15804 reference package based on EF 3.1 has been used.

Electricity data

Electricity consumption in A3 module comes from market for electricity, medium voltage in Norway. Climate impact for the energy mix is 0,022 kg CO2eq. per kWh (GWP-GHG). The Norwegian energy mix consists mainly of hydropower.

Estimates and assumptions

-For all wood and finger jointed wood, the average density of 500 kg / m3 is assumed.
-A share of 100 % pine is assumed at the sawmill.
-The water-based paint is assumed to have a density of 1.2 kg/l.
-Transport distances that are not specified have been assumed using city or country.

-Unspecified modes of transport have been assumed to be trucks or trucks and ferries
-Truck transport within Europe is assumed to have class EURO 5 and within Norway and Sweden EURO 6. All transport in C2 is with EURO 5 trucks.

Maintenance, modul B2:

- The window is assumed to require 60 ml detergent and 540 ml water per m2 window and year.
- Lubrication of moving parts in openable windows and patio doors is assumed to 10 ml per m2 window/patio door and year.
- Interior repainting is carried out on all products once every 20 years.
- Exterior repainting is carried out on products without aluminum cladding once every 5 years.
- The glass cassette is replaced once after 30 years according to EN 17213 and transport distance for the new cassette is assumed to be 300 km.

In the C module the end-of-life scenario considered is that the product is demounted during the deconstruction process and no separate energy from machine is required for this process.
After usage the product is transported in its entirety to a municipal waste collection and sorting station, the average transport distance from the demolition place to the station is assumed to be 50km.

- 95% of the aluminum, steel and is assumed to be transported 50km to a facility where its treated (fragmentized and sorted). 5% is assumed to be transported 50km to facility for landfill and disposed.
-95% of the wood frame is assumed to be transported 50km to a facility where its treated (chipped). 5% is assumed to be transported 50km to facility for landfill and disposed.(chipped).

For calculations in Module D following assumptions have been made:
The recycled steel and aluminum are replacing production of primary steel and aluminum.
Module D also contains benefits from exported energy from waste incineration declared in module C.
Exported energy assumed to be 77 % heat and 23 % electricity from incineration.

Background data

The data quality of the background data is considered good. The assessment considers all available data from the production process, including all raw materials and auxiliary materials used as well as the energy consumption in relation to available Ecoinvent 3.9.1 datasets and EPD's.

The data quality of the background data is considered good. The assessment considers all available data from the production process, including all raw materials and auxiliary materials used as well as the energy consumption in relation to available Ecoinvent 3.9.1 datasets and EPD's.

<u>EPD used for background data</u>
Hydro 4.0 Aluminium Extrusion Ingot NEPD-1840-768-EN
Pilkington Insulight Triple IGU S-P-02592

Data quality

When modeling in Simapro, Ecoinvent data (updated November 2022) has been used for generic data. The database is considered to be of high quality. For some material supplier's product specific and third party verified EPD's has been used. The EPD's used is of high quality.

Approximately 80 % specific data in this EPD for module A1-A3. Specific data are related to amount of energy, transportation and direct emission used throughout module A1-A3.

Other Indata gathered from the actual manufacturing plant with product-specific processes, specific amounts, specific waste, and spillage %, specific energy mix, specific transportation distances and transportation type and EPD's from some of the suppliers are primary data.
Primary data are collected directly from supplier and production site.

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	ND	X	ND	X	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	EU	EU	NO	ND	EU	ND	EU	ND	ND	ND	ND	ND	EU	EU	EU	EU	EU
Specific data used	80% *			-	-	-	-	-	-	-	-	-	-	-		-	-
Variation – products	not relevant			-	-	-	-	-	-	-	-	-	-	-		-	-
Variation – sites	not relevant			-	-	-	-	-	-	-	-	-	-	-		-	-

** The percentage of specific data is assumed to be larger than 60% in EPDs that lack information regarding specific data. In all other EPDs the percentage of specific data used is according to what's stated in each EPD.*

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight % and kg C/declared unit
Steel	1.49	23.65 %	0.00 %
EPDM	<0.01	0.00 %	0.00 %
Plastic	0.56	0.00 %	0.00 %
Paint	1.21	0.00 %	0.00 %
Aluminium	1.44	0.00 %	0.00 %
Glass fibre	0.40	0.00 %	0.00 %
Sealant and Glue	0.04	0.00 %	0.00 %
Insulated Glass unit	22.56	0.00 %	0.00 %
Wood	7.66	0.00 %	100.00 % and 3.83
TOTAL	35.35	1.00 %	21.66 % and 3.83
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/declared unit**
Cardboard & Paper	0.09	0.24 %	0.04
Plastic	0.08	0.23 %	0.00
Steel	0.01	0.03 %	0.00
Wood	0.42	1.19 %	0.21
TOTAL	0.60	1.70 %	0.25

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

Environmental Information

Potential environmental impact – mandatory indicators according to EN 15804

Results per 1 m^2									
Indicator	**Unit**	**A1-A3**	**A5**	**B2**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	7.13E+01	8.02E-03	5.06E+01	0.00E+00	6.26E-01	1.31E+00	9.84E-02	-2.36E+01
GWP-biogenic	kg CO_2 eq.	-1.15E+01	6.81E-01	-7.39E-01	0.00E+00	5.66E-04	1.20E+01	6.19E-01	0.00E+00
GWP-luluc	kg CO_2 eq.	2.46E+00	3.10E-06	1.16E+00	0.00E+00	3.04E-04	3.67E-04	1.96E-05	-2.22E-01
GWP-total	kg CO_2 eq.	6.23E+01	6.89E-01	5.10E+01	0.00E+00	6.27E-01	1.33E+01	7.17E-01	-2.38E+01
ODP	kg CFC 11 eq.	7.82E-06	2.15E-10	4.97E-06	0.00E+00	1.36E-08	1.57E-08	3.46E-09	-6.70E-07
AP	mol H^+ eq.	4.83E-01	1.74E-04	2.84E-01	0.00E+00	2.04E-03	1.52E-02	6.29E-04	-1.70E-01
EP-freshwater	kg P eq.	1.93E-02	6.09E-07	1.97E-02	0.00E+00	4.38E-05	1.33E-04	4.64E-06	-1.06E-02
EP-marine	kg N eq.	9.23E-02	8.08E-05	6.48E-02	0.00E+00	7.02E-04	6.88E-03	2.74E-04	-2.68E-02
EP-terrestrial	mol N eq.	9.73E-01	9.34E-04	7.35E-01	0.00E+00	7.41E-03	7.78E-02	2.93E-03	-2.89E-01
POCP	kg NMVOC eq.	2.94E-01	2.57E-04	1.90E-01	0.00E+00	3.05E-03	2.49E-02	1.18E-03	-9.61E-02
ADP-minerals&metals*	kg Sb eq.	1.06E-03	2.19E-08	7.16E-04	0.00E+00	2.01E-06	7.65E-06	1.05E-07	-8.05E-05
ADP-fossil*	MJ	9.93E+02	1.15E-01	6.91E+02	0.00E+00	8.87E+00	5.14E+00	2.53E+00	-3.30E+02
WDP*	m^3	5.20E+01	1.07E-02	3.65E+01	0.00E+00	5.16E-02	3.32E-01	1.28E-01	-2.09E+01
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 modules A1-A3 should not be used without considering the results of module C. 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.

**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.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per 1 m^2									
Indicator	**Unit**	**A1-A3**	**A5**	**B2**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	7.37E+01	8.02E-03	5.18E+01	0.00E+00	6.26E-01	1.31E+00	9.85E-02	-2.38E+01

Disclaimer: The results of modules A1-A3 should not be used without considering the results of module C. 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.

Use of resources

Results per 1 m^2									
Indicator	**Unit**	**A1-A3**	**A5**	**B2**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	5.79E+02	1.67E-03	8.53E+01	0.00E+00	1.38E-01	2.11E+00	5.00E-02	-1.11E+02
PERM*	MJ	1.49E+02	0.00E+00	2.00E+00	0.00E+00	0.00E+00	-1.39E+02	-7.35E+00	0.00E+00
PERT	MJ	7.27E+02	1.67E-03	8.73E+01	0.00E+00	1.38E-01	-1.37E+02	-7.30E+00	-1.11E+02
PENRE	MJ	1.02E+03	1.23E-01	6.94E+02	0.00E+00	9.43E+00	5.37E+00	2.70E+00	-3.51E+02
PENRM*	MJ.	1.79E+01	0.00E+00	1.68E+00	0.00E+00	0.00E+00	-1.22E+01	-6.41E-01	0.00E+00
PENRT	MJ	1.04E+03	1.23E-01	6.96E+02	0.00E+00	9.43E+00	-6.80E+00	2.05E+00	-3.51E+02
SM	kg	4.77E-01	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
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^3	1.02E+00	3.67E-04	2.46E-01	0.00E+00	2.03E-03	1.02E-02	3.21E-03	-4.79E-01
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							

Disclaimer: The results of modules A1-A3 should not be used without considering the results of module C.

**For the PERM and PENRM the new "GUIDANCE TO CALCULATING THE PRIMARY ENERGY USE INDICATORS" in Annex 3 of the PCR is followed and calculated according to option A.*

[1] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per 1 m²									
Indicator	**Unit**	**A1-A3**	**A5**	**B2**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	3.58E+01	0.00E+00	4.65E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste disposed	kg	9.23E+00	0.00E+00	5.10E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radioactive waste disposed	kg	1.31E-02	0.00E+00	1.56E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Disclaimer: The results of modules A1-A3 should not be used without considering the results of module C

Output flows

Results per 1 m²									
Indicator	**Unit**	**A1-A3**	**A5**	**B2**	**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	1.75E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.56E+00	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	3.23E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E+02	0.00E+00	0.00E+00
Exported energy, thermal	MJ	1.57E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.12E+01	0.00E+00	0.00E+00

Disclaimer: The results of modules A1-A3 should not be used without considering the results of module C

Additional information

ID: EPD Calculation Gjövik Dovista 20-06-2024 08:49

References

Ecoinvent, < https://ecoinvent.org/the-ecoinvent-database/ >

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