

Environmental Product Declaration

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

Glass Front



Modus Sverige AB



Programme	The International EPD System, www.environdec.com EPD
Programme operator	International AB
Type of EPD	EPD of multiple products, based on a representative product
EPD registration number	EPD-IES-0029236
Version date	2026-03-30
Validity date	2031-03-29

EPD covers products listed in the Product Table.

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)	<p>CEN standard EN 15804 serves as the Core Product Category Rules (PCR)</p> <p>Construction products (EN 15804:A2) (version 2.0.1) 2.0.1</p> <p>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 (chair), Noa Meron (co-chair). The review panel may be contacted via the Secretariat www.environdec.com/contact.</p>
Third-party verification:	<p>External and independent "third-party" verification of the declaration and data, according to ISO14025:2006, via EPD verification through:</p> <p><input checked="" type="checkbox"/> Individual EPD verification without a pre-verified LCA/EPD tool</p> <p>Third-party verifier: Stephen Forson, Viridis Pride Ltd.</p> <div style="border: 1px dashed gray; padding: 10px; text-align: center;">No image</div> <p>Approved by: The International EPD System</p>


Procedure for follow-up of data during EPD validity involves third party verifier: Yes No

Ownership and limitations on use of EPD

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.

Information about EPD owner	
EPD owner	Modus Sverige AB
Contact	Matti Makkonen
Contact details	Email: matti.makkonen@modussverige.se, tel. +46702632202
Address	Fannys väg 5 131 54 Nacka Sweden
Description of the organisation	Modus Sverige AB, based in Sweden, is the market leader in sustainable room solutions for commercial properties. With over 70 years of experience, we have become experts in creating flexible and adaptable office environments where people thrive and businesses can grow. Our goal is to create Sweden's most sustainable workplaces and help Swedish property owners reduce their climate footprint without compromising on functionality and aesthetics.
Product-related or management system-related certifications:	PEFC Chain of Custody Certificate
Life Cycle Assessment (LCA)	Carbon Zero AB

Product information	
Product name(s)	Glass Front
Product description:	<p>This EPD presents Glass Front variants in thicknesses of 10, 12, 16, and 20 mm. Glass Front consists of laminated glass and aluminium profiles along the floor, ceiling, and in some cases vertically against the wall. The profiles come in various dimensions depending on the glass thickness. We recommend a profile height of 40 mm both vertically and horizontally. The laminated glass panels are joined using transparent tape to ensure a clean appearance, good stability, and effective sound insulation.</p> <p>Naturally, Glass Front can be dismantled and reused when needs change.</p>
UN CPC code	4219 - Other structures (except prefabricated buildings) and parts of structures
Name and location of production site(s):	Nacka, Sweden
Technical or actual lifespan	Assumed equal to the life of the construction works it is built into, i.e. typically 50 years.

Product image	
	<p>Manufacturing process</p> <p>Modus does not carry out in-house manufacturing. Instead, we source customized laminated glass, aluminium profiles, and transparent glass tape from trusted external suppliers. These components are delivered according to project specifications and assembled on-site by our experienced installation teams. This approach ensures high flexibility, consistent quality, and enables efficient reuse and adaptation of components when project needs evolve. In addition to sourcing, we perform a minor manual process in our warehouse to specify and fit sealing strips within the aluminium profiles. This activity is excluded from the EPD calculation because it involves negligible environmental impact and falls below the cut-off criteria defined in EN 15804.</p>

Find more details on the product at <https://www.modussverige.se/>

Product Table

Mass in kg

Product Name	Weight	Unit
Glass Front	25,553	m ²
Glass Front 12mm laminated	29,739	m ²
Glass Front 16mm laminated	39,539	m ²
Glass Front 20mm laminated	49,323	m ²

Note: the declared unit was 1 m² of product, Glass Front, the weight above indicates the weight of each product included in the study. Product specific results can be obtained by using a conversion factor equals to the weight of product divided by weight of Glass front i.e. 25,553 kg.

As the weigh of individual products vary per declared unit hence the large variation per declared unit, they have less than 1% difference per 1 kg of product so using the above conversation can be considered fairly accurate to calculate product specific impacts.

Technical and functional characteristics of the product:

Surface coating: Natural anodized or black NCS S 9000-N or any RAL/NCS colour on request

Glass type (lab value Rw dB)

10.38 mm laminated glass (Rw 34 dB)

10.5 mm sound laminated glass (Rw 39 dB)

12.38 mm laminated glass (Rw 35 dB)

12.5 mm sound laminated glass (Rw 40 dB)

16.76 mm sound laminated glass (Rw 42dB)

20.76 mm sound laminated glass (Rw 43 dB)

(See Glass Front Sound for higher sound requirements)

With reference to work environment requirements, our recommendation is that the glass weighs a maximum of approximately 60kg/piece. Heavier glass is possible, but requires lifting equipment in connection with installation. Choose a glass type +3-4 dB in lab value Rw dB above the expected field value R'w dB. The composition of all included wall parts and the design of surrounding building parts determine the total sound reduction R'w dB.

Content declaration

Product Components	Mass, kg	Post-consumer material, mass-% of products	Biogenic material, mass-% of product	Biogenic material, kg C / declared unit
Float glass	2,39E+01	0,00%	0,00%	0,00E+00
Polyvinyl butyral film	1,26E+00	0,00%	0,00%	0,00E+00
Wood	9,42E-03	0,00%	0,02%	4,67E-03
Resins	8,23E-04	0,00%	0,00%	0,00E+00
Paraffin	4,11E-05	0,00%	0,00%	0,00E+00
Impregnated paper	3,09E-05	0,00%	0,00%	0,00E+00
Plastic	1,55E-02	0,00%	0,00%	0,00E+00
Adhesives and Sealants	2,27E-02	0,00%	0,00%	0,00E+00
Aluminium scrap	2,64E-01	0,00%	0,00%	0,00E+00
Primary aluminium ingot	8,37E-02	0,00%	0,00%	0,00E+00
Silicon	2,42E-03	0,00%	0,00%	0,00E+00
Magnesium	1,55E-03	0,00%	0,00%	0,00E+00
Boron-titanium	3,86E-04	0,00%	0,00%	0,00E+00
Manganese	7,04E-05	0,00%	0,00%	0,00E+00
Pigments	6,00E-06	0,00%	0,00%	0,00E+00
Minerals	3,00E-04	0,00%	0,00%	0,00E+00
Chemicals	5,32E-04	0,00%	0,00%	0,00E+00
Metal	5,15E-03	0,00%	0,00%	0,00E+00
Total	2,56E+01	0,00%	0,02%	4,67E-03

Note: content declared is for the representative product: Glass Front 10 mm Laminated

Packaging Materials	Mass, kg	Mass-% (versus the product)	Biogenic material, mass-% of product	Biogenic material kg C/declared unit
Plastic	1,27E-03	0,00%	0,00%	0,00E+00
Wood	4,45E-02	0,17%	43,26%	1,98E-02
Total	4,58E-02	0,18%	43,26%	1,98E-02

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

LCA information

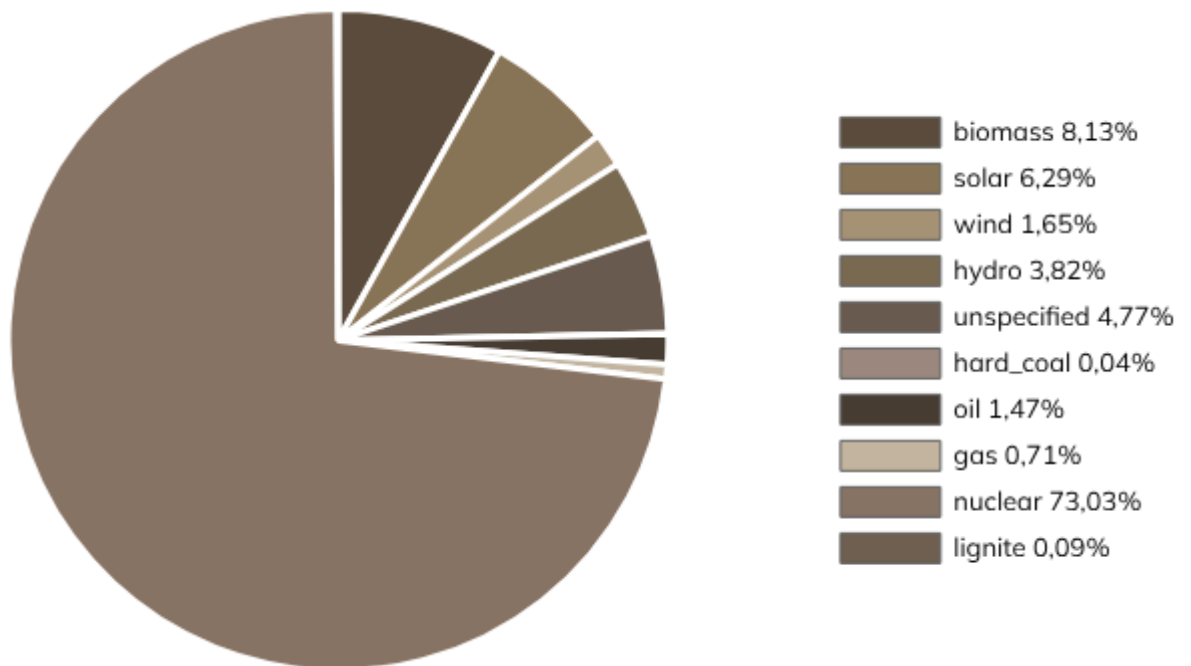
Field	Value
Functional Unit / Declared Unit	m ²
Conversion Factor to Mass	25,553
Time Representativeness	Data obtained refers to the year 2025
Geographical Scope	The product is manufactured in Nacka, Sweden, and then distributed and installed throughout Europe. As most products are sold in the Nordics, Swedish end-of-life scenarios were assumed.
System Boundary	The system boundaries are set to be "cradle to gate" with options 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)	N/A
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	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 were available. - Data gaps were filled by conservative assumptions with average or generic data. Any assumptions in such cases were documented.
Cut-off criteria	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.

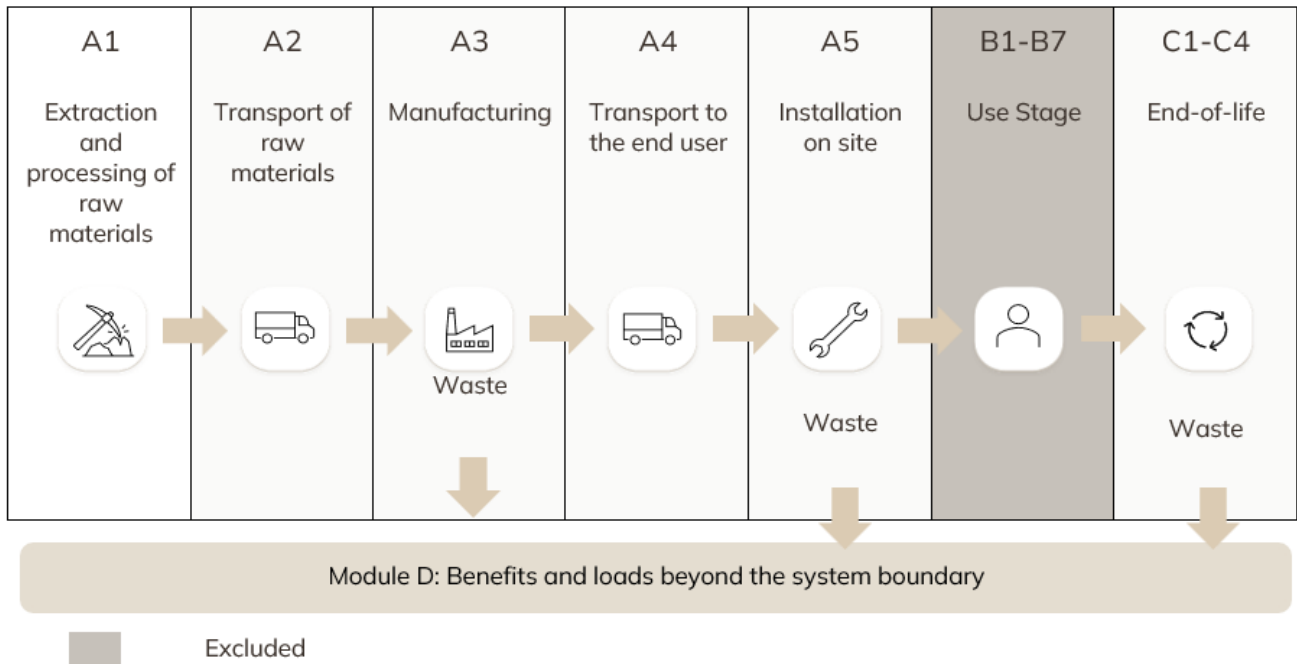
Energy Breakdown

Electricity used in the manufacturing

Energy Source	Data Source	Year	GWP excl. biogenic [kg CO2-eq/kWh]
Electricity Residual Grid Mix	Ecoinvent 3.11	2024	8,18E-02

Breakdown of electricity usage





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.
A2	Transport to the manufacturer	The raw materials are transported to the manufacturing site.
A3	Manufacturing	This module includes all resources used to produce and waste produced. This also includes additives and packaging material.
A4	Transport	Transportation from the manufacturing site to distribution centre and then from the distribution centre to the building site is included. truck: 202km
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 considers the use stage of the product.
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 Materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery - Recycling-potential
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	EU 27	EU 27	EU 27	EU 27	EU 27	-	-	-	-	-	-	-	EU 27	EU 27	EU 27	EU 27	EU 27
Specific data used	3,13 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-Products	+63% /-0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-Sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

ND – Not Declared; X – Declared Reading example: 9,0E-03 = 9,0*10⁻³ = 0,009

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

Process	Source type	Source	Reference year	Data category	GHG share (%)	Share of primary data, of GWP-GHG results for A1-A3
Manufacturing of product	Collected data	Ecoinvent 3.11, CarbonZero	2024	83% primary data 17% generic data	3,20	2,65
Transportation of raw materials to manufacturing site	Collected data	Ecoinvent 3.11	2024	100% Generic data	2,81	0,00
Production raw materials and components	Collected data	Ecoinvent 3.11, EPD-IES-0017264	2024	1% primary data 99% generic data	93,96	0,48
Production of Packaging	Collected data	Ecoinvent 3.11	2024	13% primary data 87% generic data	0,02	0,003
Total share of primary data			2024		100	3,13

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.

Summary of data quality:

The EPD is based on data collected by the Modus Svergie AB over a one-year period from January 2024. The EPD is based on an average product composition, and it is manufactured at 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, Annex E. Time representativeness is considered to be very good, Technical representativeness is deemed to be fair and Geographical representativeness is considered to be good. The relevant data assessed included no other poor or very poor data.

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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	202	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)
Plastic	packaging	1,27E-03	kg
Wood	packaging	4,45E-02	kg

A5 Output materials

Name	Type	Route	Weight	Unit (expressed per functional unit or per declared unit)
Plastic	product	recycling waste	1,27E-03	kg
Wood	product	incineration waste	4,45E-02	kg

End-of-life (C1-C4)

Scenario information	Unit (expressed per functional unit or per declared unit)
C1: Collection process specified by type	2,56E+01 kg demolition/deconstruction of steel, wood and other materials. Energy carrier: Diesel. Quantity: 1.1 kWh/tonne
C2: Waste transport specified by type	2,55E+01 kg materials not to be incinerated transported for 80 km 3,10E-02 kg materials to be incinerated transported for 130 km
C3: Recovery system specified by type	2,39E+01 kg Float glass for recycling 1,26E+00 kg Polyvinyl butyral film for recycling 9,00E-03 kg Wood for final disposal 1,00E-03 kg Resins for final disposal 0,00E+00 kg Paraffin for final disposal 0,00E+00 kg Impregnated paper for final disposal 9,00E-03 kg Plastic for recycling 2,64E-01 kg Aluminium scrap for final disposal 8,40E-02 kg Primary aluminium ingot for final disposal 2,00E-03 kg Silicon for final disposal 2,00E-03 kg Magnesium for final disposal 0,00E+00 kg Boron-titanium for final disposal 0,00E+00 kg Manganese for final disposal 0,00E+00 kg Minerals for recycling 5,00E-03 kg Metal for recycling
C4: Disposal specified by type	7,00E-03 kg Plastic for energy recovery 2,30E-02 kg Adhesives and Sealants for energy recovery 0,00E+00 kg Pigments for energy recovery 0,00E+00 kg Minerals for final disposal 1,00E-03 kg Chemicals for energy recovery 1,00E-03 kg Metal for final disposal
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.

Reuse-Recovery-Recycling-potential (D)

Scenario information
The environmental loads and benefits recorded in Module D are based on the specific quantities of materials defined in the bill of materials. This accounting reflects the product's recovery potential at its end-of-life, where the recycling of materials is assumed to displace the future production of virgin materials, thereby reducing the long-term impact of raw material extraction. Additionally, the incineration of materials facilitate resource efficiency through heat recovery; the resulting exported electricity (EEE) and thermal energy (EET) serve as a credit by reducing the future demand for external energy sources.

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 m ²									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO2 eq	3,47E+01	9,82E-01	7,47E-02	1,02E-02	3,89E-01	8,09E-01	8,78E-02	-2,60E+01
GWP-fossil	kg CO2 eq	3,47E+01	9,82E-01	1,96E-03	1,02E-02	3,89E-01	5,80E-01	6,42E-02	-2,59E+01
GWP-biogenic	kg CO2 eq	3,55E-02	2,07E-04	7,27E-02	1,39E-06	8,20E-05	2,29E-01	2,36E-02	-8,16E-02
GWP-luluc	kg CO2 eq	2,16E-02	3,25E-04	7,24E-07	1,04E-06	1,29E-04	3,51E-04	3,97E-07	-8,99E-03
ODP	kg CFC11 eq	1,47E-06	2,14E-08	3,46E-11	1,51E-10	8,48E-09	1,30E-08	2,53E-11	-6,47E-07
AP	mol H+ eq	1,93E-01	3,15E-03	1,15E-05	9,10E-05	1,25E-03	2,92E-03	1,44E-05	-1,40E-01
EP-freshwater	kg P eq	1,35E-03	6,70E-05	3,53E-07	3,28E-07	2,66E-05	6,93E-05	9,36E-07	-7,47E-04
EP-marine	kg N eq	3,37E-02	1,07E-03	5,44E-06	4,24E-05	4,24E-04	1,13E-03	1,06E-05	-2,13E-02
EP-terrestrial	mol N eq	5,05E-01	1,15E-02	5,23E-05	4,64E-04	4,58E-03	1,22E-02	6,99E-05	-3,42E-01
POCP	kg NMVOC eq	1,19E-01	4,78E-03	1,55E-05	1,39E-04	1,89E-03	4,74E-03	1,77E-05	-7,73E-02
ADP-minerals & metals ¹	kg Sb-Eq	1,91E-04	3,31E-06	6,41E-09	3,75E-09	1,31E-06	1,65E-06	6,25E-09	-1,45E-04
ADP-fossil ¹	MJ	4,69E+02	1,40E+01	2,39E-02	1,34E-01	5,53E+00	1,02E+01	1,35E-02	-3,35E+02
WDP ¹	m ³	1,68E+01	7,47E-02	1,64E-03	3,42E-04	2,96E-02	3,20E-01	6,56E-03	-1,26E+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								

*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.

Disclaimer: 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 assessment of the environmental impact over the full product life cycle.

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 m ²									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	1,31E+02	5,39E+00	7,98E-01	8,27E-04	2,14E+00	4,07E-01	3,42E-02	0,00E+00
PERM	MJ	9,62E-01	0,00E+00	-7,92E-01	0,00E+00	0,00E+00	-1,37E-01	-3,33E-02	0,00E+00
PERT	MJ	1,32E+02	5,39E+00	6,49E-03	8,27E-04	2,14E+00	2,70E-01	9,36E-04	0,00E+00
PENRE	MJ	4,14E+02	1,91E+01	1,20E-01	1,34E-01	7,58E+00	1,05E+01	8,88E-01	0,00E+00
PENRM	MJ	1,28E+00	0,00E+00	-9,07E-02	0,00E+00	0,00E+00	-3,11E+01	-8,74E-01	0,00E+00
PENRT	MJ	4,32E+02	1,91E+01	2,98E-02	1,34E-01	7,58E+00	1,02E+01	1,35E-02	0,00E+00
SM	kg	5,19E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,67E+00
RSF	MJ	3,06E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,22E-05
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	5,32E-01	1,74E-03	2,66E-06	3,26E-07	6,89E-04	2,47E-05	1,80E-06	-4,73E-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								

Additional mandatory and voluntary impact category indicators

Results per declared unit: 1 m ²									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG	kg CO2 eq	3,47E+01	9,82E-01	1,99E-03	1,02E-02	3,89E-01	7,95E-01	8,44E-02	-2,59E+01
PM	Disease incidence	2,56E-04	6,36E-08	2,06E-10	2,60E-09	2,52E-08	9,76E-08	7,19E-11	-2,29E-04
IRP ²	kBq U235 eq.	2,18E+00	1,66E-02	3,61E-05	5,65E-05	6,59E-03	1,43E-02	6,07E-05	-4,45E-01
ETP-fw ¹	CTUe	5,19E+02	1,83E+00	8,73E-03	7,19E-03	7,25E-01	2,54E+00	2,34E-01	-4,57E+02
HTP-c ¹	CTUh	8,80E-09	1,77E-10	1,62E-12	1,04E-12	7,02E-11	3,35E-10	2,81E-12	-6,54E-09
HTP-nc ¹	CTUh	3,43E-07	7,57E-09	8,38E-11	1,64E-11	3,00E-09	4,50E-09	9,37E-11	-2,52E-07
SQP ¹	Dimensionless	4,63E+02	8,23E+00	1,33E-02	8,80E-03	3,26E+00	1,40E+01	4,99E-03	-7,44E+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 and A3, instead of in modules A5 (for packaging) or modules C3 and/or C4 (for the product). The results over the entire product life cycle, from module A to C, are thus identical for GWP-GHG and GWP-total unless some of the uptake of biogenic CO2 is released as another greenhouse gas (e.g., CH4). In the context of Norwegian public procurement legislation, GWP-GHG is also referred to as GWP-IOBC.

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.

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.

Waste indicators

Results per declared unit: 1 m ²									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	1,76E+01	1,41E-02	1,10E-02	2,42E-02	5,57E-03	6,01E+00	7,34E-03	-1,59E-02
NHWD	kg	5,93E+01	1,51E-01	1,73E-04	7,82E-02	5,99E-02	0,00E+00	3,28E-02	-3,04E+00
RWD	kg	1,81E-03	0,00E+00	4,25E-09	1,39E-08	0,00E+00	3,50E-06	1,54E-08	-1,30E-03
Acronyms	HW: Hazardous waste disposed; NHW: Non-hazardous waste disposed; RW: Radioactive waste disposed								

Output flow indicators

Results per declared unit: 1 m ²									
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	2,05E-03	0,00E+00	0,00E+00	2,55E+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	7,83E-02	0,00E+00	0,00E+00	0,00E+00	1,05E-01	0,00E+00
EET	MJ	0,00E+00	0,00E+00	1,58E-01	0,00E+00	0,00E+00	0,00E+00	2,07E-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	0,005
Biogenic carbon content in the accompanying packaging	kg C	0,020

Environmental impact performance from 100% scenarios

Potential environmental impact – indicators according to EN 15804+A2

Results per declared unit: 1 m ²													
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 CO2 eq	3,89E-01	6,32E-01	3,89E-01	8,35E-01	0,00E+00	0,00E+00	0,00E+00	7,44E-01	4,95E-01	-2,62E+01	4,85E-01	0,00E+00
GWP-fossil	kg CO2 eq	3,89E-01	6,32E-01	3,89E-01	5,82E-01	0,00E+00	0,00E+00	0,00E+00	5,03E-01	2,48E-01	-2,61E+01	4,85E-01	0,00E+00
GWP-biogenic	kg CO2 eq	8,19E-05	1,33E-04	8,19E-05	2,53E-01	0,00E+00	0,00E+00	0,00E+00	2,40E-01	2,47E-01	-7,89E-02	0,00E+00	0,00E+00
GWP-luluc	kg CO2 eq	1,29E-04	2,09E-04	1,29E-04	3,53E-04	0,00E+00	0,00E+00	0,00E+00	1,39E-04	6,17E-05	-9,44E-03	7,44E-05	0,00E+00
ODP	kg CFC-11 eq	8,47E-09	1,38E-08	8,47E-09	1,31E-08	0,00E+00	0,00E+00	0,00E+00	1,02E-08	8,26E-09	-1,10E-06	9,43E-09	0,00E+00
AP	mole H+ eq	1,25E-03	2,03E-03	1,25E-03	2,93E-03	0,00E+00	0,00E+00	0,00E+00	2,11E-03	2,77E-03	-1,41E-01	2,08E-03	0,00E+00
EP-freshwater	kg P eq	2,66E-05	4,31E-05	2,66E-05	6,98E-05	0,00E+00	0,00E+00	0,00E+00	5,92E-05	4,23E-04	-7,86E-04	5,83E-05	0,00E+00
EP-marine	kg N eq	4,23E-04	6,88E-04	4,23E-04	1,13E-03	0,00E+00	0,00E+00	0,00E+00	8,20E-04	7,69E-04	-2,15E-02	8,09E-04	0,00E+00
EP-terrestrial	mole N eq	4,57E-03	7,43E-03	4,57E-03	1,23E-02	0,00E+00	0,00E+00	0,00E+00	8,79E-03	7,43E-03	-3,44E-01	8,67E-03	0,00E+00
POCP	kg NMVOC eq	1,89E-03	3,08E-03	1,89E-03	4,75E-03	0,00E+00	0,00E+00	0,00E+00	3,37E-03	2,70E-03	-7,80E-02	3,33E-03	0,00E+00
ADP-minerals & metals ¹	kg Sb eq	1,31E-06	2,13E-06	1,31E-06	1,67E-06	0,00E+00	0,00E+00	0,00E+00	1,06E-06	4,14E-07	-1,46E-04	1,03E-06	0,00E+00
ADP-fossil ¹	MJ	5,53E+00	8,99E+00	5,53E+00	1,02E+01	0,00E+00	0,00E+00	0,00E+00	8,09E+00	5,77E+00	-3,37E+02	7,58E+00	0,00E+00
WDP ¹	m3	2,96E-02	4,80E-02	2,96E-02	3,20E-01	0,00E+00	0,00E+00	0,00E+00	3,39E-01	-2,97E+00	-1,27E+01	3,34E-01	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												

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.

Use of resources 100% scenarios

Results per declared unit: 1 m ²													
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	2,13E+00	3,47E+00	2,13E+00	5,63E-01	0,00E+00	0,00E+00	0,00E+00	5,37E-01	4,03E-01	0,00E+00	0,00E+00	0,00E+00
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	-2,91E-01	0,00E+00	0,00E+00	0,00E+00	-2,91E-01	-2,91E-01	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,13E+00	3,47E+00	2,13E+00	2,72E-01	0,00E+00	0,00E+00	0,00E+00	2,46E-01	1,12E-01	0,00E+00	0,00E+00	0,00E+00
PENRE	MJ	7,58E+00	1,23E+01	7,58E+00	2,77E+01	0,00E+00	0,00E+00	0,00E+00	2,55E+01	2,32E+01	0,00E+00	0,00E+00	0,00E+00
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	-1,74E+01	0,00E+00	0,00E+00	0,00E+00	-1,74E+01	-1,74E+01	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	7,58E+00	1,23E+01	7,58E+00	1,02E+01	0,00E+00	0,00E+00	0,00E+00	8,09E+00	5,77E+00	0,00E+00	0,00E+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	-4,67E+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	-2,76E-05	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	6,88E-04	1,12E-03	6,88E-04	2,48E-05	0,00E+00	0,00E+00	0,00E+00	7,65E-03	-6,91E-02	-4,77E-01	7,63E-03	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 m ²													
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 CO2 eq	3,89E-01	6,32E-01	3,89E-01	8,18E-01	0,00E+00	0,00E+00	0,00E+00	7,26E-01	4,78E-01	-2,61E+01	7,08E-01	0,00E+00
PM	Disease incidence	2,52E-08	4,10E-08	2,52E-08	9,79E-08	0,00E+00	0,00E+00	0,00E+00	8,13E-08	4,11E-08	-2,29E-04	8,10E-08	0,00E+00
IRP ²	kBq U235 eq.	6,58E-03	1,07E-02	6,58E-03	1,44E-02	0,00E+00	0,00E+00	0,00E+00	1,25E-02	7,36E-03	-4,38E-01	-5,94E-03	0,00E+00
ETP-fw ¹	CTUe	7,25E-01	1,18E+00	7,25E-01	2,56E+00	0,00E+00	0,00E+00	0,00E+00	2,73E+00	3,56E+00	-4,61E+02	2,72E+00	0,00E+00
HTP-c ¹	CTUh	7,01E-11	1,14E-10	7,01E-11	3,38E-10	0,00E+00	0,00E+00	0,00E+00	2,61E-10	1,10E-10	-6,67E-09	2,57E-10	0,00E+00
HTP-nc ¹	CTUh	3,00E-09	4,87E-09	3,00E-09	4,54E-09	0,00E+00	0,00E+00	0,00E+00	2,84E-09	6,17E-09	-2,64E-07	2,77E-09	0,00E+00
SQP ¹	Dimensionless	3,26E+00	5,30E+00	3,26E+00	1,40E+01	0,00E+00	0,00E+00	0,00E+00	1,16E+01	1,43E+01	-7,46E+01	1,14E+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 and A3, instead of in modules A5 (for packaging) or modules C3 and/or C4 (for the product). The results over the entire product life cycle, from module A to C, are thus identical for GWP-GHG and GWP-total unless some of the uptake of biogenic CO₂ is released as another greenhouse gas (e.g., CH₄). In the context of Norwegian public procurement legislation, GWP-GHG is also referred to as GWP-IOBC.

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.

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.

Waste indicators 100% scenarios

Results per declared unit: 1 m ²													
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	5,57E-03	9,05E-03	5,57E-03	6,02E+00	0,00E+00	0,00E+00	0,00E+00	9,25E-03	7,77E-03	-2,28E-02	-1,98E-04	0,00E+00
NHWD	kg	5,99E-02	9,73E-02	5,99E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,55E+01	-3,05E+00	-3,06E-02	0,00E+00
RWD	kg	0,00E+00	0,00E+00	0,00E+00	3,52E-06	0,00E+00	0,00E+00	0,00E+00	2,80E-08	2,84E-09	-1,31E-03	-3,89E-06	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 m ²													
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	2,56E+01	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	1,42E-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	2,80E-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; EET: 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.	-29%	5,05E+01	36%
GWP-fossil	kg CO2 eq.	-29%	5,01E+01	36%
GWP-GHG	kg CO2 eq.	-29%	5,04E+01	36%
GWP-biogenic	kg CO2 eq.	-18%	3,50E-01	23%
GWP-luluc	kg CO2 eq.	-25%	2,93E-02	31%
ODP	kg CFC-11 eq.	-19%	1,83E-06	24%
AP	Mole of H+ eq.	-29%	2,76E-01	36%
EP-freshwater	kg P eq.	-27%	1,97E-03	34%
EP-marine	kg N eq.	-29%	4,96E-02	37%
EP-terrestrial	Mole of N eq.	-29%	7,36E-01	37%
POCP	kg NMVOC eq.	-29%	1,77E-01	37%
ADP-M&M	kg Sb eq.	-29%	2,73E-04	37%
ADP-fossil	MJ	-29%	6,81E+02	37%
WDP	m ³ world equiv.	-29%	2,41E+01	37%

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
<p>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.</p>		
<p>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.</p>		
<p>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.</p>		

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

NM VOC 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 (2024)
General Programme Instructions of the International EPD System, version 5.0
- 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
International Standard ISO 14044: Environmental Management – Life cycle assessment – Requirements and Guidelines.
- PEFC Certification
<https://www.pefc.org/>

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