Environmental Product Declaration

In accordance with ISO 14025 and EN 15804:2012+A2:2019 for:

Hinged single and double steel doors

from

Hellbergs Dörrar i Mellerud AB

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
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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
Website:	www.environdec.com
E-mail:	info@environdec.com

CEN standard EN 15804:2012+A2:2019 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): Construction Products PCR 2019:14 version 1.11 Windows and doors (EN 17213:2020) C-PCR-007 version 2020_04-09 UN CPC code 42120 doors, windows and their frames and thresholds for doors of iron, steel or aluminium
PCR review was conducted by: The Technical Committee of the International EPD@ System. **Chair of the PCR review**: Claudia A. Peña
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☒ EPD verification
Third party verifier: Vladimir Koci, LCAstudio. 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 from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: Hellbergs Dörrar i Mellerud AB

Contact person: Anneli Gordon

Description of the organisation:
Hellbergs Dörrar i Mellerud AB is a private owned company who develops, manufactures, and sells a wide range of classified steel doors. All doors are produced in the facilities in Mellerud, Sweden. The product range includes and combines features such as fire resistance, smoke tightness, burglar protection and sound reduction.

Name and location of production site(s):
Hellbergs Dörrar i Mellerud AB - Mellerud, Sweden

Product information

Product name: Steel door

- Hinged Single steel door 10 x 21
- Hinged Double steel door 20 x 21

Product identification:

- Hinged Single steel door HD 100-1/ HD 110-1
- Hinged Double steel door HD 100-2/ HD 110-2

Product description:
Hinged single and double steel door for use in various buildings such as but not limited to apartments, industries, logistics, schools, hospitals, hotels, shops, offices etc.

UN CPC code: 42120 doors, windows and their frames and thresholds for doors of iron, steel or aluminium

LCA information

Functional unit / declared unit:
1 m^2 of steel door.

Reference service life:
30 years

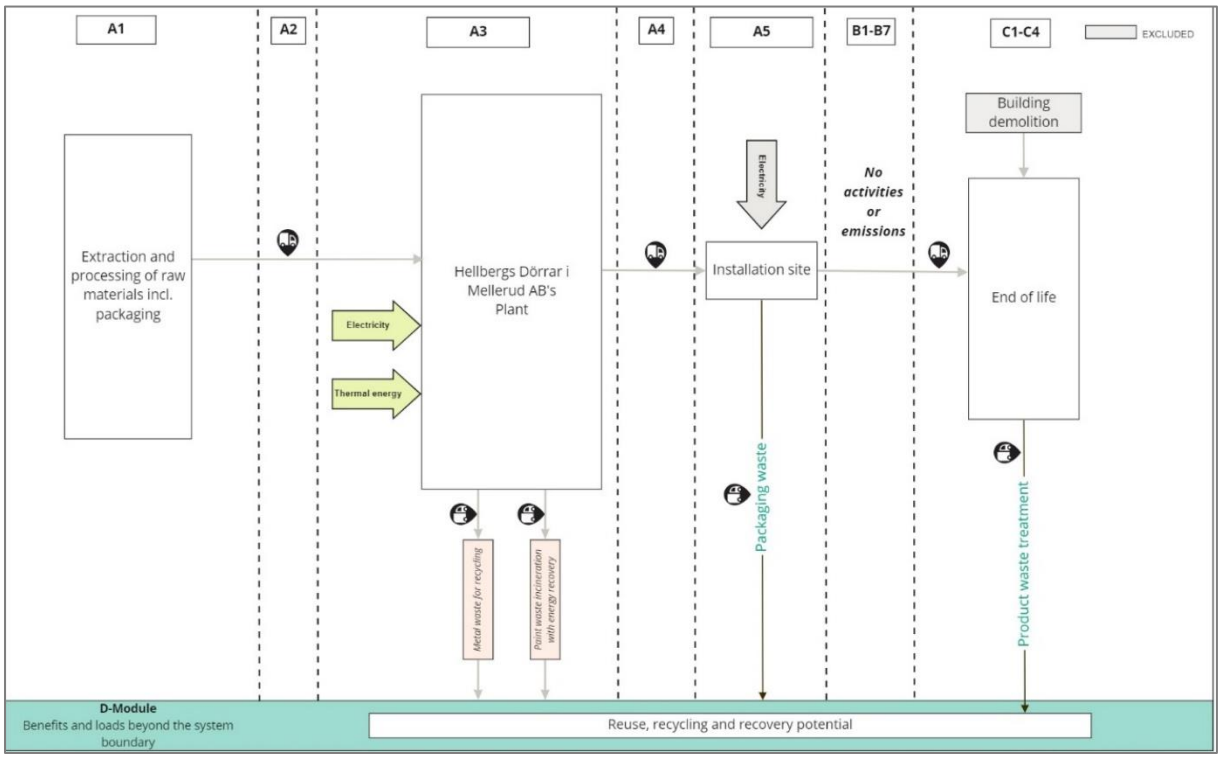
Time representativeness:
The data represents the year 2021

Database(s) and LCA software used: Software: GaBi v10.6. Databases were from GaBi LCA software v10.6 and Ecoinvent v3.8

Description of system boundaries:
Construction service EPD: Cradle to gate with modules A1-A5, modules C1-C4 and module D.

Allocation:
The allocation is based on mass, in accordance with the provisions of EN15804.

System boundary diagram and description



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. This also includes additives and packaging material.

A3, manufacturing
This module includes the manufacturing of the steel doors. Swedish electricity mix is used at this stage.

A4, Transport
Transportation from Hellbergs Dörrar I Mellerud AB's plant to the building site is taken into account. The transportation distance is based on the average transportation distance for 2021.

A5, Construction installation

This stage includes any resources used during the installation of the product on the construction site. In this case it is assumed that all doors are manually installed and so no emissions are included. Treatment of the packaging waste on-site is taken into account.

B1-B7 Use stage

Activities at this stage is assumed to have negligible impact.

C1 Deconstruction/Demolition

This stage includes the de-construction and/or demolition of the building. This is not relevant as the products included in this study are not used in the construction process.

C2 Transport

Transport distance to waste processing.

C3 Waste processing

This stage includes any waste treatment needed.

C4 Final disposal

This includes any material that is landfilled.

D Benefits and loads beyond the system boundary

Emission credits obtained from energy recovery and/or recycling materials.

Cut-off criteria:

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. Data gaps were filled by conservative assumptions with average or generic data. Any assumptions in such case 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%).

LCA: Scenarios and additional technical information

TRANSPORT FROM THE PRODUCTION PLACE TO THE USER (A4)

Transportation model

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance (km)	Fuel/Energy consumption
Truck	85 %	Average truck trailer with a 27 t payload	350	0,014 l/tkm

Fuel type used

Fuel type	Database	Regional coverage	Time reference
EU 28: Diesel mix (6,35% bio-content)	Sphera	EU	2017

ASSEMBLY (A5)

The following waste treatment rates are taken into account for waste packaging on-site.

Packaging material	Recycling rate	Incineration rate
Plastic[1]	60 %	40 %
Wood[2]	10 %	90 %

1. *Source: Plastic packaging - Swedish Waste Management Association, Swedish EPA 2021*
2. *Source: Wood packaging - SCB – Swedish statistics 2021*

Transportation distance of 50 km to the waste facility is taken into account.

END OF LIFE (C2-C4)

Transport distance to waste processing (C2)

Type	Capacity utilisation %	Type of vehicle	Distance	Fuel/Energy consumption
Truck	85 %	Average truck trailer with a 27 t payload	50 km	0,024 l/tkm

Waste treatment and disposal rates (C3-C4)

Material	Recycling rate	Incineration rate	Landfill rate
Steel	95 %	0 %	5 %
Plastic	0 %	95 %	5 %
Mineral wool	0 %	0 %	100 %

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

	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	X	X	X	X	X	X	X	X	X	X	X	X
Geography	EU	EU	SE	EU	SE	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	
Specific data used	85 %					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	Not applicable					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	Not applicable					-	-	-	-	-	-	-	-	-	-	-	-

Content information

Product components	Weight (kg)/ declared unit		Weight (kg) / declared unit	
	Hinged single steel door	%	Hinged double steel door	%
Plastic	0,01	0,03	0,01	0,02
Fireboard	0,11	0,26	0,05	0,14
Steel	32,84	79,98	30,39	78,99
Glue	0,12	0,28	0,12	0,30
Paint	1,19	2,90	1,19	3,09
Mineral wool	6,53	15,91	6,50	16,90
Silicon rubber	0,26	0,63	0,21	0,55
Total	**41,1**	**100**	**38,5**	**100**

Packaging materials	Weight (kg) / declared unit		Weight-% (versus the product)	
	Hinged single steel door	Hinged double steel door	Hinged single steel door	Hinged double steel door
Band	2,22E-02	2,43E-02	5,41E-04	6,31E-04
Environmental foil	3,98E-02	4,35E-02	9,69E-04	1,13E-03
Stretch film	2,61E-02	2,86E-02	6,36E-04	7,42E-04
Foam foil	7,21E-03	7,88E-03	1,75E-04	2,05E-04
Wood pellet	1,91E+00	2,09E+00	4,65E-02	5,42E-02
Total	**2,00E+00**	**2,19E+00**	**4,88E-02**	**5,69E-02**

Environmental Information

1) Hinged Single Steel door

Potential environmental impact – mandatory indicators according to EN 15804

Results per functional or declared unit																			
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	9,2E+01	6,0E-01	2,5E+00	9,5E+01	8,6E-01	5,9E-02	0	0	0	0	0	0	0	0	1,2E-01	3,1E-02	1,8E-01	-1,1E+02
GWP-biogenic	kg CO_2 eq.	-4,7E+00	-7,7E-04	2,2E-02	-4,6E+00	-1,1E-03	3,1E+00	0	0	0	0	0	0	0	0	-1,5E-04	2,0E-06	-3,1E-03	-3,2E-02
GWP-luluc	kg CO_2 eq.	2,5E-02	4,9E-03	4,7E-03	3,5E-02	7,1E-03	3,2E-05	0	0	0	0	0	0	0	0	9,7E-04	1,2E-06	3,7E-04	-1,3E-01
GWP-total	kg CO_2 eq.	8,8E+01	6,1E-01	2,6E+00	9,1E+01	8,7E-01	3,2E+00	0	0	0	0	0	0	0	0	1,2E-01	3,1E-02	1,8E-01	-1,1E+02
ODP	kg CFC 11 eq.	8,0E-08	7,7E-17	4,1E-14	8,0E-08	1,1E-16	4,2E-16	0	0	0	0	0	0	0	0	1,5E-17	9,6E-18	5,7E-16	-5,9E-13
AP	mol H^+ eq.	2,8E-01	1,1E-03	2,4E-02	3,0E-01	1,6E-03	4,6E-04	0	0	0	0	0	0	0	0	2,2E-04	4,0E-06	9,6E-04	-6,7E-01
EP-freshwater	kg P eq.	2,9E-04	1,8E-06	2,5E-05	3,2E-04	2,6E-06	6,0E-08	0	0	0	0	0	0	0	0	3,5E-07	1,5E-09	2,4E-07	-1,4E-04
EP-marine	kg N eq.	5,6E-02	4,7E-04	1,1E-02	6,7E-02	6,7E-04	1,5E-04	0	0	0	0	0	0	0	0	9,2E-05	1,1E-06	2,5E-04	-7,6E-02
EP-terrestrial	mol N eq.	7,3E-01	5,3E-03	1,1E-01	8,4E-01	7,6E-03	2,2E-03	0	0	0	0	0	0	0	0	1,0E-03	1,8E-05	2,7E-03	-8,3E-01
POCP	kg NMVOC eq.	2,1E-01	1,0E-03	2,8E-02	2,4E-01	1,4E-03	4,1E-04	0	0	0	0	0	0	0	0	2,0E-04	3,2E-06	7,6E-04	-2,4E-01
ADP-minerals&metals*	kg Sb eq.	4,1E-04	4,6E-08	1,1E-06	4,1E-04	6,6E-08	6,4E-09	0	0	0	0	0	0	0	0	9,0E-09	1,4E-10	1,5E-08	-3,5E-03
ADP-fossil*	MJ	9,6E+02	8,0E+00	1,3E+02	1,1E+03	1,2E+01	7,0E-01	0	0	0	0	0	0	0	0	1,6E+00	1,2E-02	2,5E+00	-1,4E+03
WDP	m^3	4,2E+01	5,2E-03	1,1E+00	4,3E+01	7,5E-03	3,3E-01	0	0	0	0	0	0	0	0	1,0E-03	3,3E-03	9,7E-03	-2,5E+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 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 functional or declared unit																		
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	8,5E+01	5,9E-01	2,5E+00	8,8E+01	8,5E-01	3,2E+00	0	0	0	0	0	0	0	0	1,2E-01	3,1E-02	1,7E-01	-1,1E+02

1- This indicator supports comparability with EPDs based on the previous version of EN 15804 (EN 15804:2012+A1:2013).

Use of resources

Results per functional or declared unit																			
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	4,9E+01	4,5E-01	2,2E+02	2,7E+02	6,4E-01	1,3E-01	0	0	0	0	0	0	0	0	8,8E-02	2,7E-03	2,6E-01	-2,9E+02
PERM	MJ	3,6E+01	0	0	3,6E+01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	8,5E+01	4,5E-01	2,2E+02	3,1E+02	6,4E-01	1,3E-01	0	0	0	0	0	0	0	0	8,8E-02	2,7E-03	2,6E-01	-2,9E+02
PENRE	MJ	9,5E+02	8,0E+00	1,3E+02	1,1E+03	1,2E+01	7,0E-01	0	0	0	0	0	0	0	0	1,6E+00	1,2E-02	2,5E+00	-1,4E+03
PENRM	MJ.	2,8E+00	0	0	2,8E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	9,6E+02	8,0E+00	1,3E+02	1,1E+03	1,2E+01	7,0E-01	0	0	0	0	0	0	0	0	1,6E+00	1,2E-02	2,5E+00	-1,4E+03
SM	kg	3,4E-01	0	0	3,4E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	1,0E+00	5,1E-04	1,7E-01	1,2E+00	7,3E-04	7,7E-03	0	0	0	0	0	0	0	0	1,0E-04	7,7E-05	3,4E-04	-9,3E-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																		

[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 functional or declared unit																		
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	2,4E-05	4,1E-10	3,5E-08	2,4E-05	5,8E-10	1,3E-10	0	0	0	0	0	0	0	0	7,9E-11	2,2E-12	3,5E-10	-1,8E-07
Non-hazardous waste disposed	kg	4,7E+00	1,2E-03	4,7E-01	5,2E+00	1,7E-03	2,4E-02	0	0	0	0	0	0	0	0	2,3E-04	3,0E-03	8,2E+00	-1,2E+01
Radioactive waste disposed	kg	3,6E-03	9,7E-06	4,4E-02	4,8E-02	1,4E-05	3,8E-05	0	0	0	0	0	0	0	0	1,9E-06	4,8E-07	2,7E-05	-5,3E-02

Output flows

Results per functional or declared unit																			
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	8,2E-01	8,2E-01	0	4,4E-02	0	0	0	0	0	0	0	0	0	3,1E+01	0	0
Materials for energy recovery	kg	0	0	2,2E-01	2,2E-01	0	1,7E+00	0	0	0	0	0	0	0	0	0	1,3E-02	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Information on biogenic carbon content

Results per functional or declared unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	1,29

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Additional environmental indicators

Results per functional or declared unit																		
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PM	Disease incidence	3,1E-06	6,3E-09	1,5E-06	4,6E-06	9,0E-09	2,3E-09	0	0	0	0	0	0	0	0	1,2E-09	5,7E-11	1,2E-08	-1,1E-05
IRP	kBq U235 eq.	1,6E+00	1,4E-03	5,1E+00	6,7E+00	2,0E-03	6,1E-03	0	0	0	0	0	0	0	0	2,7E-04	6,2E-05	3,4E-03	-8,0E+00
ETP-fw1	CTUe	2,5E+02	5,8E+00	6,9E+01	3,2E+02	8,3E+00	3,0E-01	0	0	0	0	0	0	0	0	1,1E+00	8,7E-03	1,1E+00	-5,2E+02
HTP-c1	CTUh	7,2E-08	1,2E-10	3,7E-09	7,5E-08	1,7E-10	2,0E-11	0	0	0	0	0	0	0	0	2,3E-11	4,7E-13	1,5E-10	-4,8E-05
HTP-nc1	CTUh	3,3E-06	6,4E-09	1,1E-07	3,4E-06	9,1E-09	8,0E-10	0	0	0	0	0	0	0	0	1,3E-09	5,1E-11	1,6E-08	-1,5E-06
SQP1	Dimensionless	3,3E+02	2,8E+00	2,1E+02	5,4E+02	3,9E+00	1,9E-01	0	0	0	0	0	0	0	0	5,4E-01	3,0E-03	3,5E-01	-2,2E+02

2) Hinged Double Steel door

Potential environmental impact – mandatory indicators according to EN 15804

Results per functional or declared unit																			
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	8,6E+01	5,6E-01	2,7E+00	9,0E+01	8,1E-01	5,8E-02	0	0	0	0	0	0	0	0	1,1E-01	2,2E-02	1,7E-01	-1,0E+02
GWP-biogenic	kg CO_2 eq.	-5,1E+00	-7,2E-04	2,4E-02	-5,1E+00	-1,0E-03	3,4E+00	0	0	0	0	0	0	0	0	-1,4E-04	1,4E-06	-3,2E-03	-3,1E-02
GWP-luluc	kg CO_2 eq.	2,4E-02	4,6E-03	5,1E-03	3,4E-02	6,6E-03	3,4E-05	0	0	0	0	0	0	0	0	9,1E-04	8,2E-07	3,6E-04	-1,2E-01
GWP-total	kg CO_2 eq.	8,1E+01	5,7E-01	2,8E+00	8,4E+01	8,1E-01	3,4E+00	0	0	0	0	0	0	0	0	1,1E-01	2,2E-02	1,7E-01	-1,0E+02
ODP	kg CFC 11 eq.	8,5E-08	7,2E-17	4,5E-14	8,5E-08	1,0E-16	4,5E-16	0	0	0	0	0	0	0	0	1,4E-17	6,6E-18	5,6E-16	-5,5E-13
AP	mol H^+ eq.	2,6E-01	1,1E-03	2,6E-02	2,9E-01	1,5E-03	4,9E-04	0	0	0	0	0	0	0	0	2,1E-04	2,8E-06	9,4E-04	-6,2E-01
EP-freshwater	kg PO_4^{3-} eq.	3,0E-04	1,7E-06	2,7E-05	3,3E-04	2,4E-06	6,3E-08	0	0	0	0	0	0	0	0	3,3E-07	1,0E-09	2,3E-07	-1,3E-04
EP-marine	kg N eq.	5,3E-02	4,4E-04	1,1E-02	6,5E-02	6,3E-04	1,6E-04	0	0	0	0	0	0	0	0	8,6E-05	7,5E-07	2,4E-04	-7,0E-02
EP-terrestrial	mol N eq.	6,9E-01	5,0E-03	1,2E-01	8,1E-01	7,1E-03	2,4E-03	0	0	0	0	0	0	0	0	9,7E-04	1,3E-05	2,6E-03	-7,7E-01

POCP	kg NMVOC eq.	2,0 E-01	9,3 E-04	3,1 E-02	2,3 E-01	1,3 E-03	4,4 E-04	0	0	0	0	0	0	0	0	1,8 E-04	2,2 E-06	7,4 E-04	-2,2 E-01
ADP-minerals& metals*	kg Sb eq.	3,8 E-04	4,3 E-08	1,2 E-06	3,8 E-04	6,2 E-08	6,9 E-09	0	0	0	0	0	0	0	0	8,4 E-09	9,6 E-11	1,4 E-08	-3,3 E-03
ADP-fossil*	MJ	9,0 E+02	7,5 E+00	1,4 E+02	1,0 E+03	1,1 E+01	7,5 E-01	0	0	0	0	0	0	0	0	1,5 E+00	8,4 E-03	2,4 E+00	-1,3 E+03
WDP	m^3	3,9 E+01	4,9 E-03	1,2 E+00	4,0 E+01	7,0 E-03	3,5 E-01	0	0	0	0	0	0	0	0	9,6 E-04	2,2 E-03	9,7 E-03	-2,4 E+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 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 functional or declared unit																		
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[2]	kg CO_2 eq.	7,9 E+01	5,5 E-01	2,7 E+00	8,2 E+01	7,9 E-01	3,4 E+00	0	0	0	0	0	0	0	0	1,1 E-01	2,2 E-02	1,6 E-01	-1,0 E+02

1- This indicator supports comparability with EPDs based on the previous version of EN 15804 (EN 15804:2012+A1:2013).

Use of resources

Results per functional or declared unit																		
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	4,8 E+01	4,2 E-01	2,4 E+02	2,9 E+02	6,0 E-01	1,5 E-01	0	0	0	0	0	0	0	0	8,2 E-02	1,8 E-03	2,5 E-01	-2,7 E+02
PERM	MJ	3,9 E+01	0	0	3,9 E+01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	8,7 E+01	4,2 E-01	2,4 E+02	3,3 E+02	6,0 E-01	1,5 E-01	0	0	0	0	0	0	0	0	8,2 E-02	1,8 E-03	2,5 E-01	-2,7 E+02
PENRE	MJ	8,9 E+02	7,5 E+00	1,4 E+02	1,0 E+03	1,1 E+01	7,5 E-01	0	0	0	0	0	0	0	0	1,5 E+00	8,4 E-03	2,4 E+00	-1,3 E+03
PENRM	MJ.	2,8 E+00	0	0	2,8 E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	9,0 E+02	7,5 E+00	1,4 E+02	1,0 E+03	1,1 E+01	7,5 E-01	0	0	0	0	0	0	0	0	1,5 E+00	8,4 E-03	2,4 E+00	-1,3 E+03

[2] 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.

SM	kg	3,4 E-01	0	0	3,4 E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	9,6 E-01	4,8 E-04	1,9 E-01	1,1 E+00	6,9 E-04	8,3 E-03	0	0	0	0	0	0	0	0	9,4 E-05	5,3 E-05	3,3 E-04	-8,7 E-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																		

Waste production and output flows

Waste production

Results per functional or declared unit																		
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	1,3 E-05	3,8 E-10	3,8 E-08	1,3 E-05	5,4 E-10	1,4 E-10	0	0	0	0	0	0	0	0	7,4 E-11	1,5 E-12	3,3 E-10	-1,7 E-07
Non-hazardous waste disposed	kg	4,5 E+00	1,1 E-03	5,1 E-01	5,0 E+00	1,6 E-03	2,5 E-02	0	0	0	0	0	0	0	0	2,2 E-04	2,1 E-03	8,0 E+00	-1,1 E+01
Radioactive waste disposed	kg	3,5 E-03	9,1 E-06	4,8 E-02	5,2 E-02	1,3 E-05	4,1 E-05	0	0	0	0	0	0	0	0	1,8 E-06	3,3 E-07	2,6 E-05	-5,0 E-02

Output flows

Results per functional or declared unit																			
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	9,0E-01	9,0E-01	0	2,7 E-02	0	0	0	0	0	0	0	0	0	2,9E+01	0	0
Materials for energy recovery	kg	0	0	2,4E-01	2,4E-01	0	1,9 E+00	0	0	0	0	0	0	0	0	0	8,6E-03	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Information on biogenic carbon content

Results per functional or declared unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	1,41

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Additional environmental indicators

Results per functional or declared unit																			
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PM	Disease incidence	2,9E-06	5,9E-09	1,6E-06	4,5E-06	8,5E-09	2,5E-09	0	0	0	0	0	0	0	0	1,2E-09	3,9E-11	1,1E-08	-9,8E-06
IRP	kBq U235 eq.	1,5E+00	1,3E-03	5,6E+00	7,1E+00	1,9E-03	6,6E-03	0	0	0	0	0	0	0	0	2,6E-04	4,3E-05	3,2E-03	-7,5E+00
ETP-fw1	CTUe	2,4E+02	5,4E+00	7,5E+01	3,2E+02	7,8E+00	3,3E-01	0	0	0	0	0	0	0	0	1,1E+00	6,0E-03	1,1E+00	-4,9E+02
HTP-c1	CTUh	6,9E-08	1,1E-10	4,0E-09	7,3E-08	1,6E-10	2,2E-11	0	0	0	0	0	0	0	0	2,2E-11	3,3E-13	1,5E-10	-4,4E-05
HTP-nc1	CTUh	3,2E-06	6,0E-09	1,2E-07	3,4E-06	8,6E-09	8,3E-10	0	0	0	0	0	0	0	0	1,2E-09	3,5E-11	1,6E-08	-1,4E-06
SQP1	Dimensionless	4,2E+02	2,6E+00	2,3E+02	6,5E+02	3,7E+00	2,1E-01	0	0	0	0	0	0	0	0	5,1E-01	2,0E-03	3,4E-01	-2,1E+02

Additional information

Greenhouse gas emission from the use of electricity in the manufacturing phase

Electricity mix	Value	Unit
SE electricity mix	0,0417	kg CO_2 eq/kWh

References

General Programme Instructions of the International EPD® System. Version 3.01.

ISO 14020:2000 Environmental labels and declarations — General principles

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures

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EN 15804:2012+A2:2019- Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products

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