epd-norge
Global program operatør

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

SafeRing/SafePlus 12/24 kV type CCF Arc Classified

The Norwegian EPD Foundation

Owner of the declaration:
ABB Electrification Norway AS

Product:
SafeRing/SafePlus 12/24 kV type CCF Arc Classified

Declared unit:
1 pcs

This declaration is based on Product Category Rules:
EN 15804:2012+A2:2019 serves as core PCRs. EN 50693:2019
PCR EPDItaly015 - Electronic and electrical products and systems - Switchboards

Program operator:
The Norwegian EPD Foundation

Declaration number:

NEPD-5137-4465-EN

Registration number:

NEPD-5137-4465-EN

Issue date: 11.10.2023

Valid to: 11.10.2028

EPD Software:
LCA.no EPD generator ID: 71873

General information

Product

SafeRing/SafePlus 12/24 kV type CCF Arc Classified

Owner of the declaration:

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Program operator:

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Manufacturer:

ABB Electrification Norway AS
Amtm. Aallsgt. 73
3716 Skien, Norway

Declaration number: NEPD-5137-4465-EN

Place of production:

ABB Electrification Norway AS, Skien
Amtm. Aallsgate 73
3701 Skien, Norway

This declaration is based on Product Category Rules:

EN 15804:2012+A2:2019 serves as core PCRs. EN 50693:2019 PCR EPDItaly015 - Electronic and electrical products and systems - Switchboards

Management system:

ISO 9001, ISO 14001

Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Organisation no:

921 186 037

Declared unit:

1 pcs SafeRing/SafePlus 12/24 kV type CCF Arc Classified

Issue date: 11.10.2023

Declared unit with option:

A1-A3,A4,A5,B1,B6,C1,C2,C3,C4,D

Valid to: 11.10.2028

Year of study:

2022

Functional Unit

Declared unit for 1 SafeRing/SafePlus 12/ 24 kV type CCF Arc Classified, including packaging with optional modules B1, B6, C1-C4 and D.

Comparability:

EPDs from other programmes than EPD Norway may not be comparable.

General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Norway's guidelines for verification and approval requiring that tools are i integrated into the company's environmental management system, ii the procedures for use of the EPD tool are approved by EPD-Norway, and iii the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools

Development and verification of EPD:

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD Norway.

Developer of EPD: Magnus Nystad-Hansen

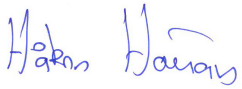
Reviewer of company-specific input data and EPD: Magnus Bjerkely

Verification of EPD tool:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

Approved:



Jane Anderson, Construction LCA

(no signature required

Håkon Hauan, CEO EPD-Norge

Product

Product description:

ABB SafeRing/SafePlus Switchgear is a medium voltage gas insulated ring main unit for secondary distribution. The main function of the switchgears is to "establish and cut off the supply of a downstream installation from an electrical and/or mechanical control and to protect people and premises at risk of fire or explosion against insulation defects". SafeRing/SafePlus can be supplied in a number of different configurations suitable for most switching applications in 12/24 kV distribution networks.

SafeRing/SafePlus 12 / 24 kV type CCVF Arc Classified switchgear consist of two load-break switch units (C-module) plus one switch-fuse combination unit (F-module).

The manufacturer proclaims a minimum product service life of 30 years but the calculations are based on 20 years as the PCR dictates.

The functional unit of this study is described as 1 piece of SafeRing/SafePlus 12 / 24 kV type CCF Arc Classified including heat loss during a 20 year product lifetime. The functional unit is IAC classified.

Product specification

Materials	kg	%
Plastics	14,70	4,42
Epoxy resin insulator, Al2O3	18,68	5,62
Metal	299,11	89,96
Total	332,48	

Packaging	kg	%
Packaging - Pallet	34,49	100,00
Total incl. packaging	366,97	

Technical data:

Parameter Amount
Rated voltage: 12 / 24 kV
Rated frequency: 50 Hz
Rated nominal current: 630 A
Rated power frequency withstand voltage: 28 / 50 kV
Rated lightning impulse withstand voltage: 95 / 125 kV
Rated short-time withstand current: 25 / 21 kA
Rated duration of short-circuit: 3 s
Rated peak withstand current: 62.5 / 52.5 kA
Insulating medium: SF6
Rated filling pressure at 20 degree Celsius: 0.14 MPa (absolute)
Internal arc classification: IAC AFL 20 kA, 1.0 s

Market:

Norway

Reference service life, product

20

Reference service life, building

N/A

LCA: Calculation rules

Declared unit:

1 pcs SafeRing/SafePlus 12/24 kV type CCF Arc Classified

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 2%) might not be included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through time allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

Data quality:

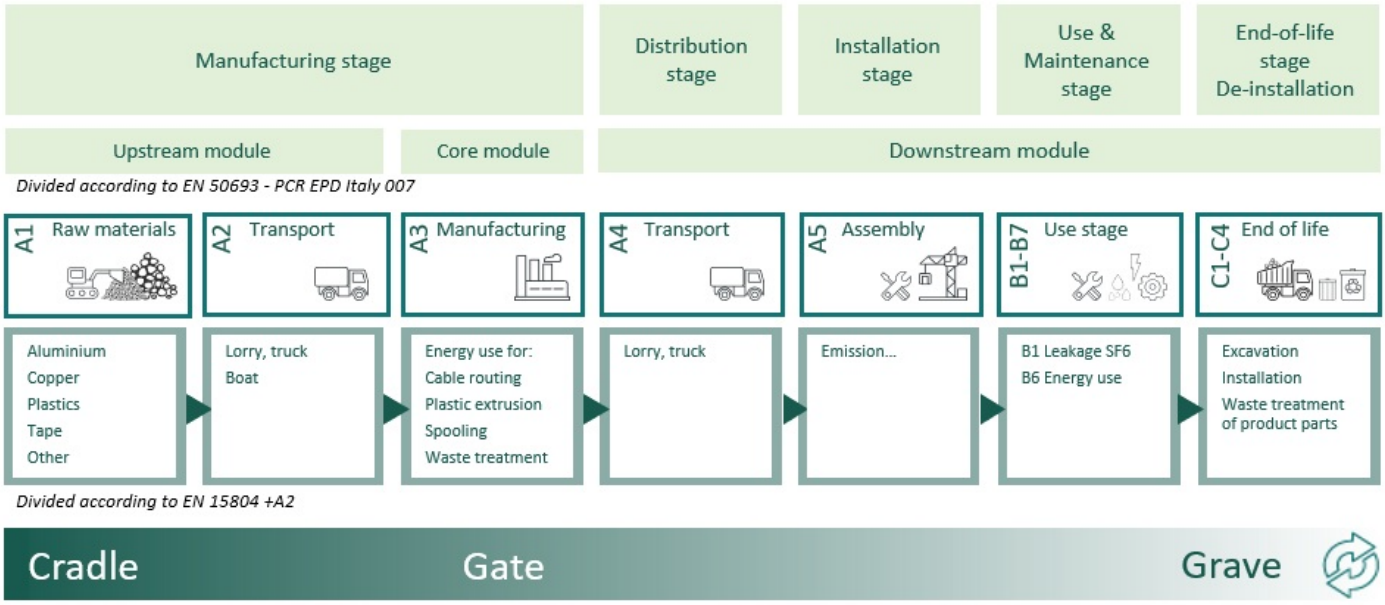
Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804, Norsus, ecoinvent and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.

Materials	Source	Data quality	Year
Plastics	CEPE 3.0	Database	2022
Epoxy resin insulator, Al2O3	ecoinvent 3.6	Database	2019
Metal	ecoinvent 3.6	Database	2019
Packaging - Pallet	ecoinvent 3.6	Database	2019
Plastics	ecoinvent 3.6	Database	2019
Plastics	Industry data 2.0	Database	2019

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Construction installation stage		Use stage							End of life stage				Beyond the system boundaries
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
X	X	X	X	X	X	MND	MND	MND	MND	X	MND	X	X	X	X	X

System boundary:



Additional technical information:

No additional technical information has been provided in this EPD.

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

The product is assumed to be transported to an installation site in Norway in module A4.

The impact of installing the unit in A5 is assumed to be very low and is set as 0. B1 includes 0.1 % yearly leakage of insulating medium during reference service life, based confirmation certificate for the product.

B6 includes electricity lost through heat loss during reference service life in accordance with the PCR. Heat loss during service is based on the resistance on the electrical circuit and 50 % loading relative to nominal current. This analysis is based on Norwegian electricity mix in B6.

The impact of removing the unit from it's place of usage (C1) to transport is assumed to be very low and is set as 0.

In C2 the switchgear is assumed to be transported to a waste treatment facility in Norway.

The waste treatment company has a process for collection and incineration of all remaining insulating medium in the unit. There is no leakage of insulating medium during the disassembly.

End-of-life treatment scenarios for the product in modules C3 and C4 are based on the default values given in EN 50963 Annex G, Table G.4

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonn)
Truck, 16-32 tonnes, EURO 5 - RER	36,7 %	132	0,044	l/tkm	5,81

Assembly (A5)	Unit	Value			
Waste, packaging, Pallet, EUR wooden pallet, average treatment (kg)	kg	34,49			

Use (B1)	Unit	Value			
SF6 leakage (kg) - GLO	kg/DU	0,07			

Operational energy (B6) and water consumption (B7)	Unit	Value			
Electricity, Norway, medium voltage (kWh)	kWh/DU	12302,11			

Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonn)
Truck, 16-32 tonnes, EURO 5 - RER	36,7 %	132	0,044	l/tkm	5,81

Waste processing (C3)	Unit	Value			
Aluminium to recycling (kg)	kg	6,10			
Copper to recycling (kg)	kg	21,90			
Other non-ferrous metals to recycling (kg)	kg	3,90			
Steel to recycling (kg)	kg	197,92			
Waste treatment per kg Plastics mixture, incineration (kg)	kg	7,42			
Waste, Hazardous, incineration (kg)	kg	20,44			

Disposal (C4)	Unit	Value			
Disposal, landfilling of aluminium (kg)	kg	2,61			
Disposal, landfilling of copper (kg)	kg	14,60			
Disposal, landfilling of other non-ferrous metals(kg)	kg	2,60			
Disposal, landfilling of steel (kg)	kg	49,48			
Landfilling of ashes from incineration of Plastics mixture (kg)	kg	0,23			
Landfilling of mixed plastics (kg)	kg	5,51			

Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of electricity, in Norway (MJ)	MJ	40,70			
Substitution of primary aluminium with net scrap (kg)|	kg	6,10			
Substitution of primary copper with net scrap (kg)	kg	14,45			
Substitution of primary other non-ferrous metals with net scrap (kg)	kg	3,90			
Substitution of primary steel with net scrap (kg)	kg	141,73			
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	383,31			

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environmental impact											
Indicator		Unit	A1-A3	A4	A5	B1	B6	C1	C2	C3	C4	D
	GWP-total	kg CO_2 -eq	2,05E+03	8,08E+00	5,32E+01	1,81E+03	2,61E+02	0	8,08E+00	6,71E+01	5,46E+01	-2,53E+02
	GWP-fossil	kg CO_2 -eq	2,10E+03	8,07E+00	9,28E-01	1,81E+03	2,52E+02	0	8,07E+00	6,71E+01	4,10E+00	-2,51E+02
	GWP-biogenic	kg CO_2 -eq	-5,12E+01	3,29E-03	5,23E+01	0,00E+00	7,47E+00	0	3,29E-03	3,82E-04	5,05E+01	-5,05E-01
	GWP-luluc	kg CO_2 -eq	2,11E+00	2,82E-03	2,38E-04	0,00E+00	1,11E+00	0	2,82E-03	9,84E-03	3,18E-04	-1,21E+00
	ODP	kg CFC11 -eq	1,36E-04	1,84E-06	1,48E-07	0,00E+00	1,68E-05	0	1,84E-06	5,85E-06	2,50E-07	-1,62E-01
	AP	mol H+ -eq	3,44E+01	3,30E-02	7,46E-03	0,00E+00	1,01E+00	0	3,30E-02	7,61E-02	9,47E-03	-6,98E+00
	EP-FreshWater	kg P -eq	6,51E-01	6,34E-05	1,11E-05	0,00E+00	1,07E-02	0	6,34E-05	1,08E-03	3,36E-04	-5,12E-02
	EP-Marine	kg N -eq	3,42E+00	9,79E-03	3,20E-03	0,00E+00	1,76E-01	0	9,79E-03	1,62E-02	8,50E-02	-4,55E-01
	EP-Terrestial	mol N -eq	4,20E+01	1,08E-01	3,43E-02	0,00E+00	2,20E+00	0	1,08E-01	1,79E-01	2,92E-02	-5,95E+00
	POCP	kg NMVOC -eq	1,26E+01	3,31E-02	8,82E-03	0,00E+00	5,78E-01	0	3,31E-02	4,81E-02	2,25E-02	-2,00E+00
	ADP-minerals&metals[1]	kg Sb -eq	2,71E-01	2,19E-04	1,51E-05	0,00E+00	6,32E-03	0	2,19E-04	1,04E-04	7,33E-06	-3,52E-02
	ADP-fossil[1]	MJ	2,50E+04	1,22E+02	1,09E+01	0,00E+00	3,51E+03	0	1,22E+02	2,36E+02	2,01E+01	-2,38E+03
	WDP[1]	m^3	1,66E+04	1,16E+02	1,68E+01	0,00E+00	6,49E+05	0	1,16E+02	2,40E+01	5,02E+02	-2,15E+04

GWP-total = Global Warming Potential total; 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

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

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 experienced with the indicator
3. Eutrophication aquatic freshwater shall be in kg P-eq., there is a typo in EN 15804:2012+A2:2019 regarding this unit. Eutrophication calculated as PO4-eq is presented on page 11

Remarks to environmental impacts

Additional environmental impact indicators

Indicator		Unit	A1-A3	A4	A5	B1	B6	C1	C2	C3	C4	D
	PM	Disease incidence	1,93E-04	5,81E-07	9,12E-08	0,00E+00	9,41E-06	0	5,81E-07	6,83E-07	1,25E-07	-2,98E-05
	IRP[2]	kgBq U235 -eq	9,47E+01	5,32E-01	3,95E-02	0,00E+00	6,70E+01	0	5,32E-01	1,01E+00	1,36E-01	-3,03E+00
	ETP-fw[1]	CTUe	3,46E+05	8,97E+01	1,24E+01	5,71E-03	6,12E+03	0	8,97E+01	9,96E+02	1,82E+03	-6,33E+04
	HTP-c[1]	CTUh	1,65E-05	0,00E+00	1,38E-09	1,00E-12	3,32E-07	0	0,00E+00	3,21E-08	2,51E-09	-1,66E-06
	HTP-nc[1]	CTUh	3,65E-04	9,69E-08	6,63E-08	1,00E-12	6,30E-06	0	9,69E-08	3,81E-07	3,16E-08	-4,95E-05
	SQP[1]	dimensionless	1,86E+04	8,39E+01	6,11E+00	0,00E+00	1,65E+03	0	8,39E+01	5,06E+01	6,49E+01	-9,97E+02

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Potential Soil Quality Index (dimensionless)

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

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 experienced 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.

Resource use												
Indicator		Unit	A1-A3	A4	A5	B1	B6	C1	C2	C3	C4	D
	PERE	MJ	4,41E+03	1,72E+00	2,24E-01	0,00E+00	4,81E+04	0	1,72E+00	9,78E+00	2,48E+00	-6,97E+02
	PERM	MJ	4,79E+02	0,00E+00	-4,79E+02	0,00E+00	0,00E+00	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	4,89E+03	1,72E+00	-4,79E+02	0,00E+00	4,81E+04	0	1,72E+00	9,78E+00	2,48E+00	-6,97E+02
	PENRE	MJ	2,50E+04	1,22E+02	1,09E+01	0,00E+00	3,51E+03	0	1,22E+02	2,36E+02	2,01E+01	-2,38E+03
	PENRM	MJ	3,71E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	2,51E+04	1,22E+02	1,09E+01	0,00E+00	3,51E+03	0	1,22E+02	2,36E+02	2,01E+01	-2,38E+03
	SM	kg	6,37E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0	0,00E+00	0,00E+00	1,37E-02	1,01E+01
	RSF	MJ	1,28E+01	6,15E-02	6,54E-03	0,00E+00	3,77E+01	0	6,15E-02	2,89E-03	5,14E-02	6,60E+00
	NRSF	MJ	1,12E+02	2,20E-01	7,45E-02	0,00E+00	9,91E+01	0	2,20E-01	0,00E+00	2,30E-02	1,59E+02
	FW	m^3	2,45E+01	1,28E-02	7,94E-03	0,00E+00	3,60E+02	0	1,28E-02	1,94E-01	2,72E-02	-2,91E+00

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

End of life - Waste

Indicator		Unit	A1-A3	A4	A5	B1	B6	C1	C2	C3	C4	D
	HWD	kg	7,15E+00	6,21E-03	0,00E+00	0,00E+00	6,63E-01	0	6,21E-03	8,38E-04	1,56E-01	-9,98E-01
	NHWD	kg	5,83E+03	5,82E+00	3,45E+01	0,00E+00	2,77E+02	0	5,82E+00	1,11E+01	7,49E+01	-9,87E+01
	RWD	kg	6,38E-02	8,30E-04	0,00E+00	0,00E+00	3,28E-02	0	8,30E-04	1,39E-03	1,45E-04	-2,90E-03

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

End of life - Output flow

Indicator		Unit	A1-A3	A4	A5	B1	B6	C1	C2	C3	C4	D
	CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	kg	0,00E+00	0,00E+00	8,09E-04	0,00E+00	0,00E+00	0	0,00E+00	2,30E+02	5,19E-04	-3,95E-01
	MER	kg	3,67E-01	0,00E+00	3,42E+01	0,00E+00	0,00E+00	0	0,00E+00	2,79E+01	3,42E-04	-5,21E-02
	EEE	MJ	1,24E+00	0,00E+00	2,38E+01	0,00E+00	0,00E+00	0	0,00E+00	3,92E+01	3,72E-03	-1,28E-01
	EET	MJ	8,50E+00	0,00E+00	3,60E+02	0,00E+00	0,00E+00	0	0,00E+00	3,64E+02	5,62E-02	-1,93E+00

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

Biogenic Carbon Content

Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in accompanying packaging	kg C	1,43E+01

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

Additional requirements

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

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Data source	Amount	Unit
Electricity, Norway, medium voltage (kWh)	ecoinvent 3.6	21,18	g CO2-eq/kWh

Dangerous substances

The product contains no substances given by the REACH Candidate list.

Indoor environment

Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products											
Indicator	**Unit**	A1-A3	A4	A5	B1	B6	C1	C2	C3	C4	D
GWPIOBC	kg CO_2 -eq	2,09E+03	8,08E+00	0,00E+00	1,58E+03	2,93E+02	0	8,08E+00	6,69E+01	6,43E-02	-3,12E+02

GWP-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

Bibliography

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.
EN 15804:2012+A2:2019 Environmental product declaration - Core rules for the product category of construction products.
ecoinvent v3, Allocation, cut-off by classification, Swiss Centre of Life Cycle Inventories.
Iversen et al., (2021) eEPD v2021.09 Background information for EPD generator tool system verification, LCA.no Report number: 07.21.
Vold et al (2021) EPD generator for ABB, Background information for customer application and LCA data, LCA.no Report number: 09.21
EN 50693:2019 Product category rules for life cycle assessment of electronic and electrical products and systems.
PCR EPDItaly015 Electronic and electrical products and systems, Switchboards.

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