epddanmark

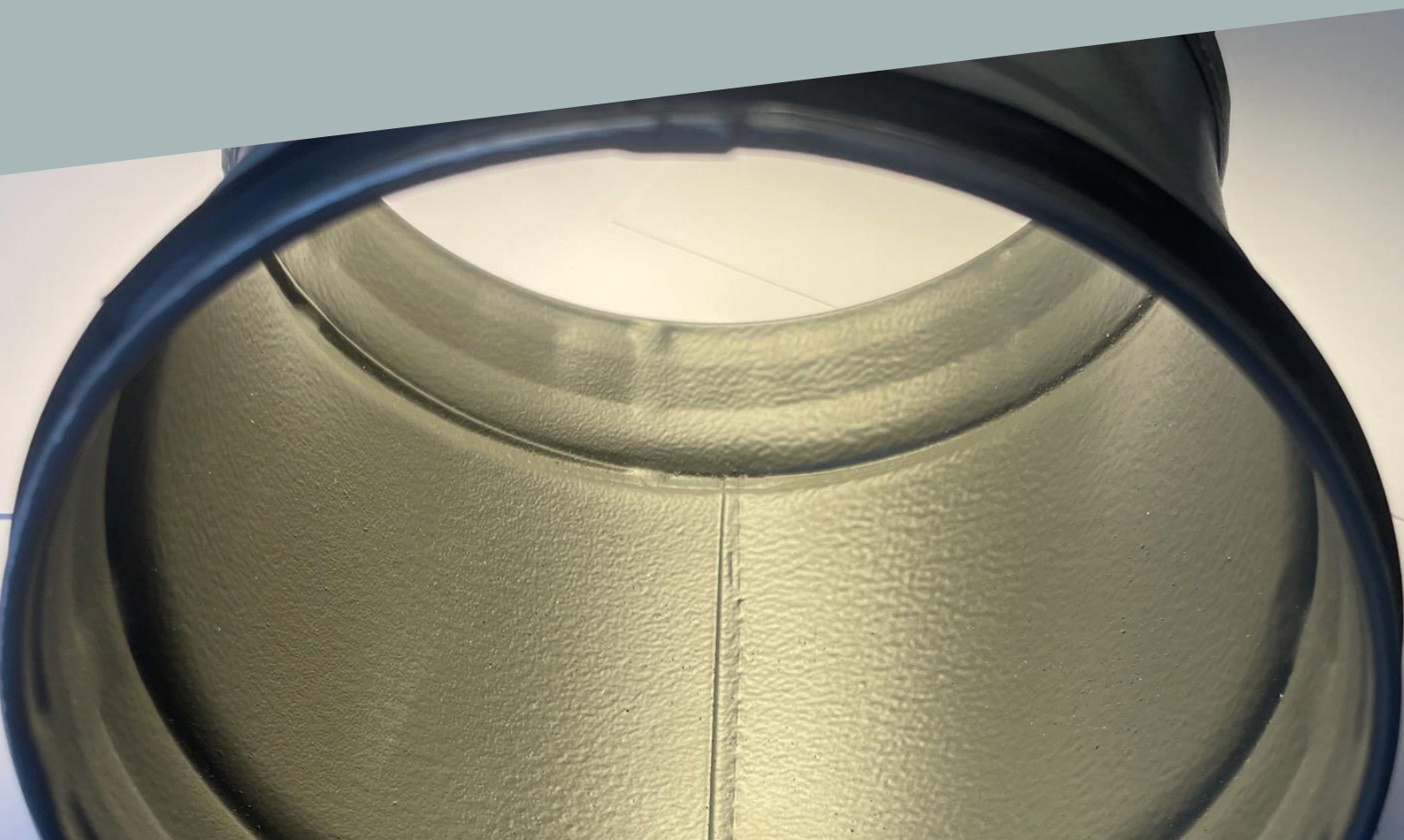
ECO PLATFORM EPD VERIFIED

Owner: COATABLE A/S
No.: MD-24088-EN
Issued: 11-06-2024
Valid to: 11-06-2029

3rd PARTY **VERIFIED**

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | **ISO 14025 & EN 15804**



Owner of declaration
COATABLE A/S
Knud Bro Allé 7b
3660 Stenløse, Denmark
VAT no. DK-42 59 01 69

Programme
EPD Danmark
www.epddanmark.dk

☐ Industry EPD
☒ Product EPD

Declared product(s)
VentGuard Ventilation Coating™ VC50
VentGuard Special Coating™ SC50

Number of declared datasets/product variations: 2

Production site
Anerbjergevej 46A, 6893 Hemmet, Denmark.

Product(s) use
Recommended application of VC50 includes sealing surfaces of ventilation pipes, chimneys, and ducts in residential and office buildings with normal conditions. SC50 contains good anti-corrosive properties and is suitable for sealing surfaces of ventilation pipes, chimneys, and ducts exposed to corrosive environments, e.g. on ships/maritime environments, manufacturing facilities, and laboratories. Additionally, SC50 protects against acid and alkaline exposure, enhances the durability of the ventilation ducts, and prolongs their service life.

Declared/ functional unit
1 kg of coating

Year of production site data (A3)
07/2021 – 07/2022

EPD version
1st version

Issued: 11-06-2024
Valid to: 11-06-2029

Basis of calculation
This EPD is developed in accordance with the European standard EN 15804+A2.

Comparability
EPDs of construction products may not be comparable if they do not comply with the requirements in EN 15804. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database.

Validity
This EPD has been verified in accordance with ISO 14025 and is valid for 5 years from the date of issue.

Use
The intended use of an EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings.

EPD type
☒Cradle-to-gate with modules C1-C4 and D
☐Cradle-to-gate with options, modules C1-C4 and D
☐Cradle-to-grave and module D
☐Cradle-to-gate
☐Cradle-to-gate with options

CEN standard EN 15804 serves as the core PCR

Independent verification of the declaration and data, according to EN ISO 14025

☐ internal ☒ external

Third party verifier:

Guangli Du
BUILD - Aalborg University, Denmark

Martha Katrine Sørensen
EPD Danmark

Life cycle stages and modules (MND = module not declared)																
Product			Construction process		Use							End of life				Beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport	Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Re-use, recovery and recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

Product information

Product description

The main product components are shown in the table below.

Material	VC50	SC50	Unit
Surface protective ingredients	5	5	Wt.%
Thinning agent	15	12	Wt.%
Flame retardant	3	4	Wt.%
Binder	77	80	Wt.%
Sum	**100**	**100**	**Wt.%**

Product packaging:

The composition of the sales- and transport packaging of the product is shown in the table below.

Material	VC50	SC50	Unit
Metal	100	100	Wt.%
Sum	**100**	**100**	**Wt.%**

Representativity

This declaration, including data collection and the modeled foreground system including results, represents the production of 1 kg of coating on the production site located in Hemmet, Denmark. Product specific data are based on average values collected in the period 07/2021 – 07/2022. Background data are based on the LCA for Experts database version 2023.1 and the EcoInvent database version 3.8. Data are less than 10 years old. Generally, the used background datasets are of high quality, and the majority of the datasets are only a couple of years old.

Hazardous substances

The declared products does not contain substances listed on the "Candidate List of Substances of Very High Concern for authorisation"

(http://echa.europa.eu/candidate-list-table)

Essential characteristics

The declared products are approved as fire retardant according to the requirements of DS/EN 1361-1 2013 and DS428.

SC50 is tested in environments with pH values from 3-12, with no signs of degradation of coating materials. Tested according to DS/EN ISO 2812-3, 2012.

Further technical information can be obtained by contacting the manufacturer or on the manufacturer's website: www.coatable.dk/

Reference Service Life (RSL)

The reference service life (RSL) of the declared product is 25 years.

Picture of product(s)

Below are pictures of the declared products, including examples of their applications:

Figure 1 - Declared product, VentGuard Special Coating™ SC50.

Figure 2 - Declared product, VC50, applied on ventilation duct of concrete.

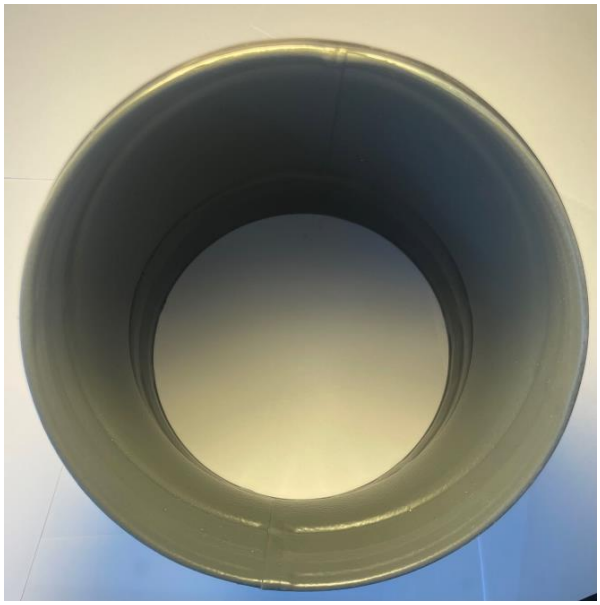


Figure 1 - Declared product, SC50, applied on ventilation duct of steel.

Figure 4 - Declared product, VC50, applied on ventilation duct of fiber cement.

LCA background

Declared unit

The LCI and LCIA results in this EPD relates to environmental impacts caused by the production and end-of-life of 1 kg of coating.

Name	VC50	SC50	Unit
Declared unit	1	1	Kg
Density	1.49–1.55	1.48–1.54	g/cm³
Conversion factor to 1 kg.	1	1	-

The declared unit is defined for the final product in wet form per 1 kg. This can be converted in accordance with the technical specifications regarding typical film thickness and associated material consumption in relation to the relevant conditions (wet compared to dry). However, the exact spread rate and film thickness depend on the specific surface of the product to which the coating is applied.

Technical specifications	VC50	SC50	Unit
Recommended film thickness - Wet film	± 635	± 215	µ
Recommended film thickness - Dry film	± 365	± 120	µ
Theoretical spread rate	0.6-1.5	0.4-1.5	kg/m²

Functional unit

Not defined.

PCR

This EPD is developed according to the core rules for the product category of construction products in EN 15804+A2:2019.

Guarantee of Origin – certificates

Foreground system:

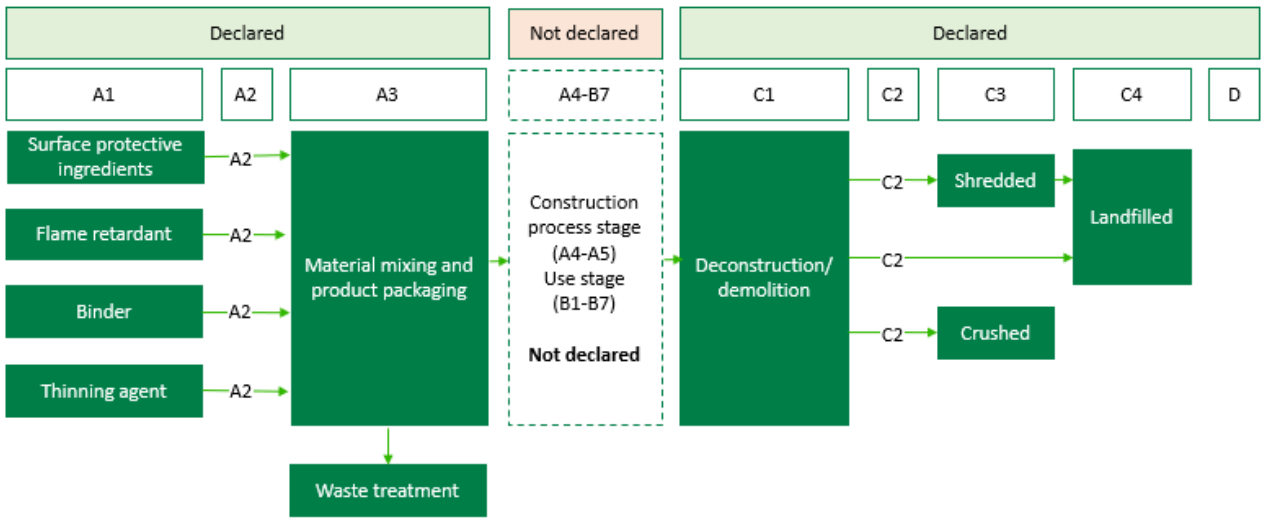
No "Guarantee of Origin" certificates are used in the production. The products are produced using the average Danish residual energy mix, and the consumption of comfort heating is based on average data during production. Remaining energy processes are modelled using the average residual energy mix.

Background system:

Upstream processes are modelled using the average electricity grid mix relevant to the respective country or region. Downstream processes are also modelled using the average electricity grid mix relevant to the respective country or region.

Flow diagram

The main processes included within the system boundaries of the product system is presented in the flow diagram below.



System boundary

This EPD is based on a cradle-to-gate LCA with modules C1-C4 and D, in which 100 weight-% has been accounted for.

The general rules for the exclusion of inputs and outputs follows the requirements in EN 15804, 6.3.5, where the total of neglected input flows per module shall be a maximum of 5 % of energy usage and mass and 1 % of energy usage and mass for unit processes.

Allocation of energy and production waste is based on mass, i.e. per kg of product manufactured at the production site in Hemmet, Denmark.

Product stage (A1-A3) includes:

A1 – Extraction and processing of raw materials

A2 – Transport to the production site

A3 – Manufacturing processes

The product stage comprises the acquisition of all raw materials, products and energy, transport to the production site, packaging and waste processing up to the ”end-of-waste” state or final disposal. The LCA results are declared in aggregated form for the product stage, which means, that the sub-modules A1, A2 and A3 are declared as one module A1-A3.

At Coatable’s production site, the input materials are mixed in the desired ratio using a drill in order to produce VC50 and SC50, respectively. No material loss is associated with the production. Additionally, the product is poured into containers which each can contain 19,2 kg of coating.

End of Life (C1-C4) includes:

C1 – Deconstruction

C2 – Transport to waste processing

C3 – Waste processing

C4 – Disposal

When reaching its end-of-life the declared product is disposed together with the product on which it is applied. Typically, this will include ventilation pipes, chimneys, or ducts manufactured from galvanized steel, stainless steel, or concrete that are either collected for recycling or final disposal. Therefore, three scenarios are included. One scenario for coating applied on ventilations pipes, chimneys, and ducts manufactured from galvanized steel or stainless steel that are collected for recycling, one scenario for coating applied on concrete ventilations pipes or ducts collected for recycling, and one scenario for coating applied on concrete ventilations pipes, chimneys, or ducts collected for final disposal.

All three scenarios include deconstruction (excavation) (C1) and transport from the construction site to the waste processing facility or landfill (C2). A default distance of 50 km is estimated for all the scenarios.

In the scenario for coating applied on galvanized steel or stainless steel collected for recycling, the coating is shredded together with the steel (C3) and a minor faction of approx. 5% is landfilled as shredder fluff (C4).

In the scenario for coating applied on concrete collected for recycling, the coating is crushed together with the concrete, which includes a material loss of 3% (C3).

In the scenario for coating applied on concrete collected for final disposal, the coating is landfilled together with the concrete (C4).

Re-use, recovery and recycling potential (D) includes:

No potential benefits are associated with the coating in any of the included scenarios.

LCA results

The LCA results are presented for each of the declared products. The results include three end-of-life scenarios;

- (C1-C4, D): Coating applied on ventilations pipes, chimneys, and ducts of galvanized- or stainless steel collected for recycling.
- (C1*-C4*, D*): Coating applied on concrete ventilations pipes or ducts collected for recycling.
- (C1**-C4**, D**): Coating applied on concrete ventilations pipes, chimneys, or ducts collected for final disposal.

Results for: VentGuard Ventilation Coating™ VC50.

ENVIRONMENTAL IMPACTS PER KG OF Coating_VC50																	
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**	**C1***	**C2***	**C3***	**C4***	**D***	**C1****	**C2****	**C3****	**C4****	**D****
GWP-total	[kg CO_2 eq.]	3,40E+00	1,74E-04	2,76E-03	1,00E-02	4,91E-04	0,00E+00	1,74E-04	2,76E-03	1,65E-03	0,00E+00	0,00E+00	1,74E-04	2,76E-03	0,00E+00	9,41E-03	0,00E+00
GWP-fossil	[kg CO_2 eq.]	3,17E+00	1,71E-04	2,73E-03	9,97E-03	5,07E-04	0,00E+00	1,71E-04	2,73E-03	1,65E-03	0,00E+00	0,00E+00	1,71E-04	2,73E-03	0,00E+00	9,72E-03	0,00E+00
GWP-biogenic	[kg CO_2 eq.]	1,77E-01	5,64E-07	6,24E-06	2,85E-05	-1,75E-05	0,00E+00	5,64E-07	6,24E-06	-1,70E-05	0,00E+00	0,00E+00	5,64E-07	6,24E-06	0,00E+00	-3,34E-04	0,00E+00
GWP-luluc	[kg CO_2 eq.]	5,40E-02	1,61E-06	2,55E-05	5,23E-06	1,60E-06	0,00E+00	1,61E-06	2,55E-05	1,26E-05	0,00E+00	0,00E+00	1,61E-06	2,55E-05	0,00E+00	3,06E-05	0,00E+00
ODP	[kg CFC 11 eq.]	6,50E-09	2,26E-17	3,59E-16	1,56E-13	1,31E-15	0,00E+00	2,26E-17	3,59E-16	2,81E-15	0,00E+00	0,00E+00	2,26E-17	3,59E-16	0,00E+00	2,51E-14	0,00E+00
AP	[mol H^+ eq.]	2,13E-02	2,40E-06	4,07E-06	1,61E-05	3,65E-06	0,00E+00	2,40E-06	4,07E-06	8,76E-06	0,00E+00	0,00E+00	2,40E-06	4,07E-06	0,00E+00	6,99E-05	0,00E+00
EP-freshwater	[kg P eq.]	1,71E-04	6,34E-10	1,01E-08	4,61E-08	1,04E-09	0,00E+00	6,34E-10	1,01E-08	5,72E-09	0,00E+00	0,00E+00	6,34E-10	1,01E-08	0,00E+00	1,99E-08	0,00E+00
EP-marine	[kg N eq.]	4,46E-03	1,09E-06	1,48E-06	5,21E-06	9,43E-07	0,00E+00	1,09E-06	1,48E-06	4,02E-06	0,00E+00	0,00E+00	1,09E-06	1,48E-06	0,00E+00	1,81E-05	0,00E+00
EP-terrestrial	[mol N eq.]	7,09E-02	1,20E-05	1,75E-05	5,11E-05	1,04E-05	0,00E+00	1,20E-05	1,75E-05	4,44E-05	0,00E+00	0,00E+00	1,20E-05	1,75E-05	0,00E+00	1,99E-04	0,00E+00
POCP	[kg NMVOC eq.]	7,90E-03	3,25E-06	3,56E-06	1,26E-05	2,85E-06	0,00E+00	3,25E-06	3,56E-06	1,09E-05	0,00E+00	0,00E+00	3,25E-06	3,56E-06	0,00E+00	5,45E-05	0,00E+00
ADPm[1]	[kg Sb eq.]	1,71E-05	1,15E-11	1,83E-10	8,64E-09	2,38E-11	0,00E+00	1,15E-11	1,83E-10	1,80E-09	0,00E+00	0,00E+00	1,15E-11	1,83E-10	0,00E+00	4,56E-10	0,00E+00
ADPf[1]	[MJ]	5,99E+01	2,36E-03	3,76E-02	1,11E-01	6,85E-03	0,00E+00	2,36E-03	3,76E-02	3,30E-02	0,00E+00	0,00E+00	2,36E-03	3,76E-02	0,00E+00	1,31E-01	0,00E+00
WDP[1]	[m^3 world eq. deprived]	4,60E-01	2,09E-06	3,33E-05	8,64E-04	5,65E-05	0,00E+00	2,09E-06	3,33E-05	3,26E-04	0,00E+00	0,00E+00	2,09E-06	3,33E-05	0,00E+00	1,08E-03	0,00E+00
Caption	GWP-total = Globale 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 = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water depletion potential																
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: $1,95*10^2$ or 195, while 1,12E-11 is the same as $1,12*10^{-11}$ or 0,0000000000112.																
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.																

(C1-C4, D): Coating applied on ventilations pipes, chimneys, and ducts manufactured from galvanized- or stainless steel that are collected for recycling. (C1-C4*, D*): Coating applied on concrete ventilations pipes or ducts collected for recycling. (C1**-C4**, D**): Coating applied on concrete ventilations pipes, chimneys, or ducts collected for final disposal.*

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG OF Coating_VC50																	
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**	**C1***	**C2***	**C3***	**C4***	**D***	**C1****	**C2****	**C3****	**C4****	**D****
PM	[Disease incidence]	1,96E-07	1,27E-10	3,50E-11	1,33E-10	4,49E-11	0,00E+00	1,27E-10	3,50E-11	1,66E-10	0,00E+00	0,00E+00	1,27E-10	3,50E-11	0,00E+00	8,60E-10	0,00E+00
IRP[2]	[kBq U235 eq.]	1,57E-01	6,61E-07	1,05E-05	9,45E-04	9,03E-06	0,00E+00	6,61E-07	1,05E-05	7,15E-05	0,00E+00	0,00E+00	6,61E-07	1,05E-05	0,00E+00	1,73E-04	0,00E+00
ETP-fw[1]	[CTUe]	2,48E+01	1,69E-03	2,69E-02	3,27E-02	3,71E-03	0,00E+00	1,69E-03	2,69E-02	2,20E-02	0,00E+00	0,00E+00	1,69E-03	2,69E-02	0,00E+00	7,10E-02	0,00E+00
HTP-c[1]	[CTUh]	2,60E-09	3,43E-14	5,46E-13	1,35E-11	5,76E-13	0,00E+00	3,43E-14	5,46E-13	4,85E-13	0,00E+00	0,00E+00	3,43E-14	5,46E-13	0,00E+00	1,10E-11	0,00E+00
HTP-nc[1]	[CTUh]	2,32E-07	1,55E-12	2,43E-11	8,53E-11	6,08E-11	0,00E+00	1,55E-12	2,43E-11	1,76E-11	0,00E+00	0,00E+00	1,55E-12	2,43E-11	0,00E+00	1,16E-09	0,00E+00
SQP[1]	-	1,60E+02	9,87E-04	1,57E-02	1,57E-01	1,66E-03	0,00E+00	9,87E-04	1,57E-02	8,90E-03	0,00E+00	0,00E+00	9,87E-04	1,57E-02	0,00E+00	3,19E-02	0,00E+00
Caption	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 = Soil Quality (dimensionless)																
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Disclaimers	[1] The results of this environmental 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.																

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RESOURCE USE PER KG OF Coating_VC50																	
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**	**C1***	**C2***	**C3***	**C4***	**D***	**C1****	**C2****	**C3****	**C4****	**D****
PERE	[MJ]	3,08E+01	1,72E-04	2,73E-03	2,45E-01	1,12E-03	0,00E+00	1,72E-04	2,73E-03	3,07E-03	0,00E+00	0,00E+00	1,72E-04	2,73E-03	0,00E+00	2,14E-02	0,00E+00
PERM	[MJ]	2,63E+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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	[MJ]	3,34E+01	1,72E-04	2,73E-03	2,45E-01	1,12E-03	0,00E+00	1,72E-04	2,73E-03	3,07E-03	0,00E+00	0,00E+00	1,72E-04	2,73E-03	0,00E+00	2,14E-02	0,00E+00
PENRE	[MJ]	5,82E+01	2,37E-03	3,77E-02	1,11E-01	6,86E-03	0,00E+00	2,37E-03	3,77E-02	3,31E-02	0,00E+00	0,00E+00	2,37E-03	3,77E-02	0,00E+00	1,31E-01	0,00E+00
PENRM	[MJ]	1,78E+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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	6,03E+01	2,37E-03	3,77E-02	1,11E-01	6,86E-03	0,00E+00	2,37E-03	3,77E-02	3,31E-02	0,00E+00	0,00E+00	2,37E-03	3,77E-02	0,00E+00	1,31E-01	0,00E+00
SM	[kg]	1,32E-02	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	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	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	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]	2,22E-02	1,88E-07	3,00E-06	7,84E-05	1,73E-06	0,00E+00	1,88E-07	3,00E-06	9,43E-06	0,00E+00	0,00E+00	1,88E-07	3,00E-06	0,00E+00	3,32E-05	0,00E+00
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water																
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(C1-C4, D): Coating applied on ventilations pipes, chimneys, and ducts manufactured from galvanized- or stainless steel that are collected for recycling. (C1-C4*, D*): Coating applied on concrete ventilations pipes or ducts collected for recycling. (C1**-C4**, D**): Coating applied on concrete ventilations pipes, chimneys, or ducts collected for final disposal.*

WASTE CATEGORIES AND OUTPUT FLOWS PER KG OF Coating_VC50																	
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**	**C1***	**C2***	**C3***	**C4***	**D***	**C1****	**C2****	**C3****	**C4****	**D****
HWD	[kg]	9,67E-06	7,34E-15	1,17E-13	-2,78E-11	1,49E-13	0,00E+00	7,34E-15	1,17E-13	-8,57E-14	0,00E+00	0,00E+00	7,34E-15	1,17E-13	0,00E+00	2,86E-12	0,00E+00
NHWD	[kg]	6,90E-02	3,61E-07	5,75E-06	4,34E-04	3,43E-02	0,00E+00	3,61E-07	5,75E-06	8,71E-06	0,00E+00	0,00E+00	3,61E-07	5,75E-06	0,00E+00	6,57E-01	0,00E+00
RWD	[kg]	8,91E-04	4,44E-09	7,06E-08	9,39E-06	7,82E-08	0,00E+00	4,44E-09	7,06E-08	4,44E-07	0,00E+00	0,00E+00	4,44E-09	7,06E-08	0,00E+00	1,50E-06	0,00E+00
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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	[kg]	5,41E-02	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	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	2,76E-02	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	0,00E+00	0,00E+00	0,00E+00
EET	[MJ]	1,20E-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy																
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: $1,95*10^{2}$ or 195, while 1,12E-11 is the same as $1,12*10^{-11}$ or 0,0000000000112.																

(C1-C4, D): Coating applied on ventilations pipes, chimneys, and ducts manufactured from galvanized- or stainless steel that are collected for recycling. (C1-C4*, D*): Coating applied on concrete ventilations pipes or ducts collected for recycling. (C1**-C4**, D**): Coating applied on concrete ventilations pipes, chimneys, or ducts collected for final disposal.*

BIOGENIC CARBON CONTENT PER KG OF Coating_VC50		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	[kg C]	0,00E+00
Biogenic carbon content in accompanying packaging	[kg C]	0,00E+00
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO_2	

Results for: VentGuard Special Coating™ SC50.

ENVIRONMENTAL IMPACTS PER KG OF Coating_SC50																	
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**	**C1***	**C2***	**C3***	**C4***	**D***	**C1****	**C2****	**C3****	**C4****	**D****
GWP-total	[kg CO_2 eq.]	3,59E+00	1,81E-04	2,88E-03	1,04E-02	5,13E-04	0,00E+00	1,81E-04	2,88E-03	1,72E-03	0,00E+00	0,00E+00	1,81E-04	2,88E-03	0,00E+00	9,82E-03	0,00E+00
GWP-fossil	[kg CO_2 eq.]	3,34E+00	1,79E-04	2,85E-03	1,04E-02	5,29E-04	0,00E+00	1,79E-04	2,85E-03	1,72E-03	0,00E+00	0,00E+00	1,79E-04	2,85E-03	0,00E+00	1,01E-02	0,00E+00
GWP-biogenic	[kg CO_2 eq.]	1,94E-01	5,89E-07	6,51E-06	2,97E-05	-1,82E-05	0,00E+00	5,89E-07	6,51E-06	-1,78E-05	0,00E+00	0,00E+00	5,89E-07	6,51E-06	0,00E+00	-3,49E-04	0,00E+00
GWP-luluc	[kg CO_2 eq.]	5,98E-02	1,68E-06	2,67E-05	5,46E-06	1,67E-06	0,00E+00	1,68E-06	2,67E-05	1,32E-05	0,00E+00	0,00E+00	1,68E-06	2,67E-05	0,00E+00	3,20E-05	0,00E+00
ODP	[kg CFC 11 eq.]	7,10E-09	2,35E-17	3,75E-16	1,63E-13	1,37E-15	0,00E+00	2,35E-17	3,75E-16	2,93E-15	0,00E+00	0,00E+00	2,35E-17	3,75E-16	0,00E+00	2,62E-14	0,00E+00
AP	[mol H^+ eq.]	2,29E-02	2,50E-06	4,25E-06	1,68E-05	3,81E-06	0,00E+00	2,50E-06	4,25E-06	9,15E-06	0,00E+00	0,00E+00	2,50E-06	4,25E-06	0,00E+00	7,30E-05	0,00E+00
EP-freshwater	[kg P eq.]	1,85E-04	6,61E-10	1,05E-08	4,81E-08	1,08E-09	0,00E+00	6,61E-10	1,05E-08	5,97E-09	0,00E+00	0,00E+00	6,61E-10	1,05E-08	0,00E+00	2,07E-08	0,00E+00
EP-marine	[kg N eq.]	4,76E-03	1,14E-06	1,54E-06	5,44E-06	9,84E-07	0,00E+00	1,14E-06	1,54E-06	4,20E-06	0,00E+00	0,00E+00	1,14E-06	1,54E-06	0,00E+00	1,89E-05	0,00E+00
EP-terrestrial	[mol N eq.]	7,70E-02	1,25E-05	1,82E-05	5,34E-05	1,08E-05	0,00E+00	1,25E-05	1,82E-05	4,64E-05	0,00E+00	0,00E+00	1,25E-05	1,82E-05	0,00E+00	2,07E-04	0,00E+00
POCP	[kg NMVOC eq.]	8,24E-03	3,39E-06	3,72E-06	1,32E-05	2,97E-06	0,00E+00	3,39E-06	3,72E-06	1,14E-05	0,00E+00	0,00E+00	3,39E-06	3,72E-06	0,00E+00	5,69E-05	0,00E+00
ADPm[1]	[kg Sb eq.]	1,97E-05	1,20E-11	1,91E-10	9,02E-09	2,48E-11	0,00E+00	1,20E-11	1,91E-10	1,88E-09	0,00E+00	0,00E+00	1,20E-11	1,91E-10	0,00E+00	4,76E-10	0,00E+00
ADPf[1]	[MJ]	6,30E+01	2,46E-03	3,92E-02	1,16E-01	7,15E-03	0,00E+00	2,46E-03	3,92E-02	3,45E-02	0,00E+00	0,00E+00	2,46E-03	3,92E-02	0,00E+00	1,37E-01	0,00E+00
WDP[1]	[m^3 world eq. deprived]	4,68E-01	2,19E-06	3,48E-05	9,02E-04	5,90E-05	0,00E+00	2,19E-06	3,48E-05	3,41E-04	0,00E+00	0,00E+00	2,19E-06	3,48E-05	0,00E+00	1,13E-03	0,00E+00
Caption	GWP-total = Globale 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 = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water depletion potential																
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: $1,95*10^2$ or 195, while 1,12E-11 is the same as $1,12*10^{-11}$ or 0,0000000000112.																
Disclaimer	[1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.																

(C1-C4, D): Coating applied on ventilations pipes, chimneys, and ducts manufactured from galvanized- or stainless steel that are collected for recycling. (C1-C4*, D*): Coating applied on concrete ventilations pipes or ducts collected for recycling. (C1**-C4**, D**): Coating applied on concrete ventilations pipes, chimneys, or ducts collected for final disposal.*

ADDITIONAL ENVIRONMENTAL IMPACTS PER KG OF Coating_SC50																	
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**	**C1***	**C2***	**C3***	**C4***	**D***	**C1****	**C2****	**C3****	**C4****	**D****
PM	[Disease incidence]	2,13E-07	1,33E-10	3,66E-11	1,38E-10	4,69E-11	0,00E+00	1,33E-10	3,66E-11	1,74E-10	0,00E+00	0,00E+00	1,33E-10	3,66E-11	0,00E+00	8,98E-10	0,00E+00
IRP[2]	[kBq U235 eq.]	1,64E-01	6,90E-07	1,10E-05	9,86E-04	9,43E-06	0,00E+00	6,90E-07	1,10E-05	7,46E-05	0,00E+00	0,00E+00	6,90E-07	1,10E-05	0,00E+00	1,81E-04	0,00E+00
ETP-fw[1]	[CTUe]	2,60E+01	1,77E-03	2,81E-02	3,42E-02	3,87E-03	0,00E+00	1,77E-03	2,81E-02	2,30E-02	0,00E+00	0,00E+00	1,77E-03	2,81E-02	0,00E+00	7,41E-02	0,00E+00
HTP-c[1]	[CTUh]	2,70E-09	3,58E-14	5,70E-13	1,41E-11	6,01E-13	0,00E+00	3,58E-14	5,70E-13	5,06E-13	0,00E+00	0,00E+00	3,58E-14	5,70E-13	0,00E+00	1,15E-11	0,00E+00
HTP-nc[1]	[CTUh]	2,40E-07	1,62E-12	2,54E-11	8,90E-11	6,34E-11	0,00E+00	1,62E-12	2,54E-11	1,84E-11	0,00E+00	0,00E+00	1,62E-12	2,54E-11	0,00E+00	1,22E-09	0,00E+00
SQP[1]	-	1,65E+02	1,03E-03	1,64E-02	1,64E-01	1,74E-03	0,00E+00	1,03E-03	1,64E-02	9,29E-03	0,00E+00	0,00E+00	1,03E-03	1,64E-02	0,00E+00	3,33E-02	0,00E+00
Caption	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 = Soil Quality (dimensionless)																
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Disclaimers	[1] The results of this environmental 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.																

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RESOURCE USE PER KG OF Coating_SC50																	
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**	**C1***	**C2***	**C3***	**C4***	**D***	**C1****	**C2****	**C3****	**C4****	**D****
PERE	[MJ]	3,10E+01	1,79E-04	2,85E-03	2,55E-01	1,17E-03	0,00E+00	1,79E-04	2,85E-03	3,21E-03	0,00E+00	0,00E+00	1,79E-04	2,85E-03	0,00E+00	2,23E-02	0,00E+00
PERM	[MJ]	2,72E+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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	[MJ]	3,38E+01	1,79E-04	2,85E-03	2,55E-01	1,17E-03	0,00E+00	1,79E-04	2,85E-03	3,21E-03	0,00E+00	0,00E+00	1,79E-04	2,85E-03	0,00E+00	2,23E-02	0,00E+00
PENRE	[MJ]	6,09E+01	2,47E-03	3,94E-02	1,16E-01	7,16E-03	0,00E+00	2,47E-03	3,94E-02	3,46E-02	0,00E+00	0,00E+00	2,47E-03	3,94E-02	0,00E+00	1,37E-01	0,00E+00
PENRM	[MJ]	2,08E+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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	6,34E+01	2,47E-03	3,94E-02	1,16E-01	7,16E-03	0,00E+00	2,47E-03	3,94E-02	3,46E-02	0,00E+00	0,00E+00	2,47E-03	3,94E-02	0,00E+00	1,37E-01	0,00E+00
SM	[kg]	1,54E-02	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	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	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	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]	2,30E-02	1,96E-07	3,13E-06	8,19E-05	1,81E-06	0,00E+00	1,96E-07	3,13E-06	9,85E-06	0,00E+00	0,00E+00	1,96E-07	3,13E-06	0,00E+00	3,46E-05	0,00E+00
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water																
	The numbers are declared in scientific notation, fx 1,95E+02. This number can also be written as: $1,95*10^{2}$ or 195, while 1,12E-11 is the same as $1,12*10^{-11}$ or 0,0000000000112.																

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WASTE CATEGORIES AND OUTPUT FLOWS PER KG OF Coating_SC50																	
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**	**C1***	**C2***	**C3***	**C4***	**D***	**C1****	**C2****	**C3****	**C4****	**D****
HWD	[kg]	1,07E-05	7,66E-15	1,22E-13	-2,90E-11	1,56E-13	0,00E+00	7,66E-15	1,22E-13	-8,95E-14	0,00E+00	0,00E+00	7,66E-15	1,22E-13	0,00E+00	2,98E-12	0,00E+00
NHWD	[kg]	7,10E-02	3,77E-07	6,00E-06	4,53E-04	3,58E-02	0,00E+00	3,77E-07	6,00E-06	9,09E-06	0,00E+00	0,00E+00	3,77E-07	6,00E-06	0,00E+00	6,86E-01	0,00E+00
RWD	[kg]	9,29E-04	4,63E-09	7,37E-08	9,80E-06	8,16E-08	0,00E+00	4,63E-09	7,37E-08	4,64E-07	0,00E+00	0,00E+00	4,63E-09	7,37E-08	0,00E+00	1,56E-06	0,00E+00
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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	[kg]	5,87E-02	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	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	2,85E-02	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	0,00E+00	0,00E+00	0,00E+00
EET	[MJ]	1,24E-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy																
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BIOGENIC CARBON CONTENT PER KG OF Coating_SC50		
Parameter	**Unit**	**At the factory gate**
Biogenic carbon content in product	[kg C]	0,00E+00
Biogenic carbon content in accompanying packaging	[kg C]	0,00E+00
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO_2	

Additional information

LCA interpretation

A contribution analysis has been carried out with the aim of indicating which processes and materials contribute the most to the overall results. Generally, the maximum contribution to all the studied core environmental impact categories is caused by the extraction of raw materials in module (A1). Generally, the maximum contribution to most of the impact categories is caused by the consumption of the binder and surface protective ingredients, respectively. When looking at the GWP-categories, as an example, the maximum contribution to GWP-fossil is caused by the consumption of binder, while the maximum contribution to GWP-biogenic and GWP-land use and land use change is caused by the consumption of the surface protective ingredients.

Technical information on scenarios

Reference service life

RSL information	VC50	SC50
Reference service Life	25 years	25 years
Declared product properties	Technical specifications and guidance can be obtained from the company's website www.coatable.dk or from direct contact to Coatable at +45 30 48 92 26 or hello@coatable.dk.	
Design application parameters		
Assumed quality of work		
Outdoor environment		
Indoor environment		
Usage conditions		
Maintenance		

End of life (C1-C4)

When reaching its end of life, the declared products are reduced in weight (going from wet to dry film).

Scenario information relevant for VC50	Scenario 1: Coating of steel (for recycling)	Scenario 2: Coating of concrete (for recycling)	Scenario 3: Coating of concrete (for disposal)	Unit
Collected separately	0.66	0.66	0.66	kg
Collected with mixed waste				kg
For reuse				kg
(*) For recycling	0.66	0.66		kg
For energy recovery				kg
(*) For final disposal			0.66	kg
Assumptions for scenario development				As appropriate

(*) The ventilation pipes, chimneys, and ducts are assumed collected separately for recycling or final disposal and the coating is, therefore, exposed to the same type of waste management.

Scenario information relevant for SC50	Scenario 1: Coating of steel (for recycling)	Scenario 2: Coating of concrete (for recycling)	Scenario 3: Coating of concrete (for disposal)	Unit
Collected separately	0.69	0.69	0.69	kg
Collected with mixed waste				kg
For reuse				kg
(*) For recycling	0.69	0.69		kg
For energy recovery				kg
(*) For final disposal			0.69	kg
Assumptions for scenario development				As appropriate

(*) The ventilation pipes, chimneys, and ducts are assumed collected separately for recycling or final disposal and the coating is, therefore, exposed to the same type of waste management.

Re-use, recovery and recycling potential (D)

No potential benefits are associated with the coating in any of the included scenarios.

Indoor air

The EPD does not give information on release of dangerous substances to indoor air because the horizontal standards on the relevant measurements are not available. Read more in EN15804+A2 chapter 7.4.1.

Soil and water

The EPD does not give information on release of dangerous substances to soil and water because the horizontal standards on the relevant measurements are not available. Read more in EN15804+A2 chapter 7.4.2.

References

Publisher	epddanmark www.epddanmark.dk Template version 2022.2
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General programme instructions
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EN 15804
DS/EN 15804 + A2:2019 - "Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products"

EN 15942
DS/EN 15942:2011 – " Sustainability of construction works – Environmental product declarations – Communication format business-to-business"

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ISO 14040
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ISO 14044

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