

Owner: DS Stålkonstruktion A/S
No.: MD-21007-EN
Issued: 10-03-2021
Valid to: 10-03-2026

3rd PARTY VERIFIED

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | ISO 14025 & EN 15804



Owner of declaration
 DS Stålkonstruktion A/S
 Samsøvej 2
 DK-9500 Hobro
 25130979



Issued:
 10-03-2021

Valid to:
 10-03-2026

Programme
 EPD Danmark
 www.epddanmark.dk



Basis of calculation

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

- Industry EPD
- Product EPD

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.

Declared product(s)
 Structural steel

Validity

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

Number of declared datasets/product variations: 2

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.

Production site
 Samsøvej 2
 DK-9500 Hobro

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


Product(s) use

DS Stålkonstruktion structural steel is used in every type of building, including: industrial buildings, Agricultural buildings, commercial buildings, stadiums and car showrooms.

DS Stålkonstruktion is Northern Europe's largest steel producer. DS Stålkonstruktion supplies quality solutions to construction projects in Denmark, Sweden and Norway, and Germany.

Declared or functional unit
 1 ton of structural steel

Year of data
 2019

CEN standard EN 15804 serves as the core PCR
Independent verification of the declaration and data, according to EN ISO 14025
<input type="checkbox"/> internal <input checked="" type="checkbox"/> external
Third party verifier:  <hr/> Charlotte Merlin



 Henrik Fred Larsen
 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	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Product information

Product description

The main product components are shown in the two tables below for painted structural steel and galvanised structural steel, respectively.

The steel used for the painted and galvanized structural steel consists of 60% scrap, with 69% post-consumer scrap.

The steel delivered to DS Stålkonstruktion is an average of 10% hollow sections, 45% plates and 45% beams.

Painted structural steel

Material	Weight-% of declared product
Scrap steel	58.9
Primary steel	39.3
Welding wire (iron)	0.5
Paint	1.3

Galvanised structural steel

Material	Weight-% of declared product
Scrap steel	59.2
Primary steel	39.5
Welding wire (iron)	0.5
Galvanization	0.9

Representativity

This declaration, including data collection and the modeled foreground system including results, represents the production of structural steel on the production site located in Hobro in Denmark. Product specific data are based on average values collected in the period July 2019 to June 2020. Background data are based on GaBi professional and EcoInvent 3.6 databases and are less than 10 years old. Generally, the used background datasets are of high quality, and most of the datasets are only a couple of years old.

Hazardous substances

The structural steel does not contain substances listed in the "Candidate List of Substances of Very High Concern for Authorisation"

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

Essential characteristics (CE)

Structural steel is produced according to product standards or codes in compliance with the customer's order and specification. Each customer order reflects specific needs in terms of material grades, mechanical properties, chemical composition or geometrical requirements and restrictions, and is set to account for and meet the relevant design and execution standards governing the structure.

Regardless of which product is ordered from DS Stålkonstruktion, it is made from certified steel and supplied in accordance with all the relevant EU standards. DS Stålkonstruktion has both the technical and regulatory authority approval to operate in all markets in Europe.

In European countries, the Eurocode 3 series applies to design of buildings and civil engineering works manufactured in steel and assumes fabrication according to the associated execution standard, the EN 1090 Series. These standards outline specific product standards, such as the EN 1025 Series, from which structural steel products are often selected in design specifications and ordered.

Further technical information can be obtained by contacting the manufacturer or on the manufacturer's website:

<https://www.ds-staal.dk/>

Reference Service Life (RSL)

A reference service life for structural steel is not declared. It is a construction product with many different application purposes. The lifetime therefore will be limited by the service life of the application.

Picture of product(s)



LCA background

Declared unit

The LCI and LCIA results in this EPD relates to impacts caused by the production of 1 ton structural steel.

Name	Value	Unit
Declared unit	1	ton
Density	7850	kg/m ³
Conversion factor to 1 kg.	0.001	-

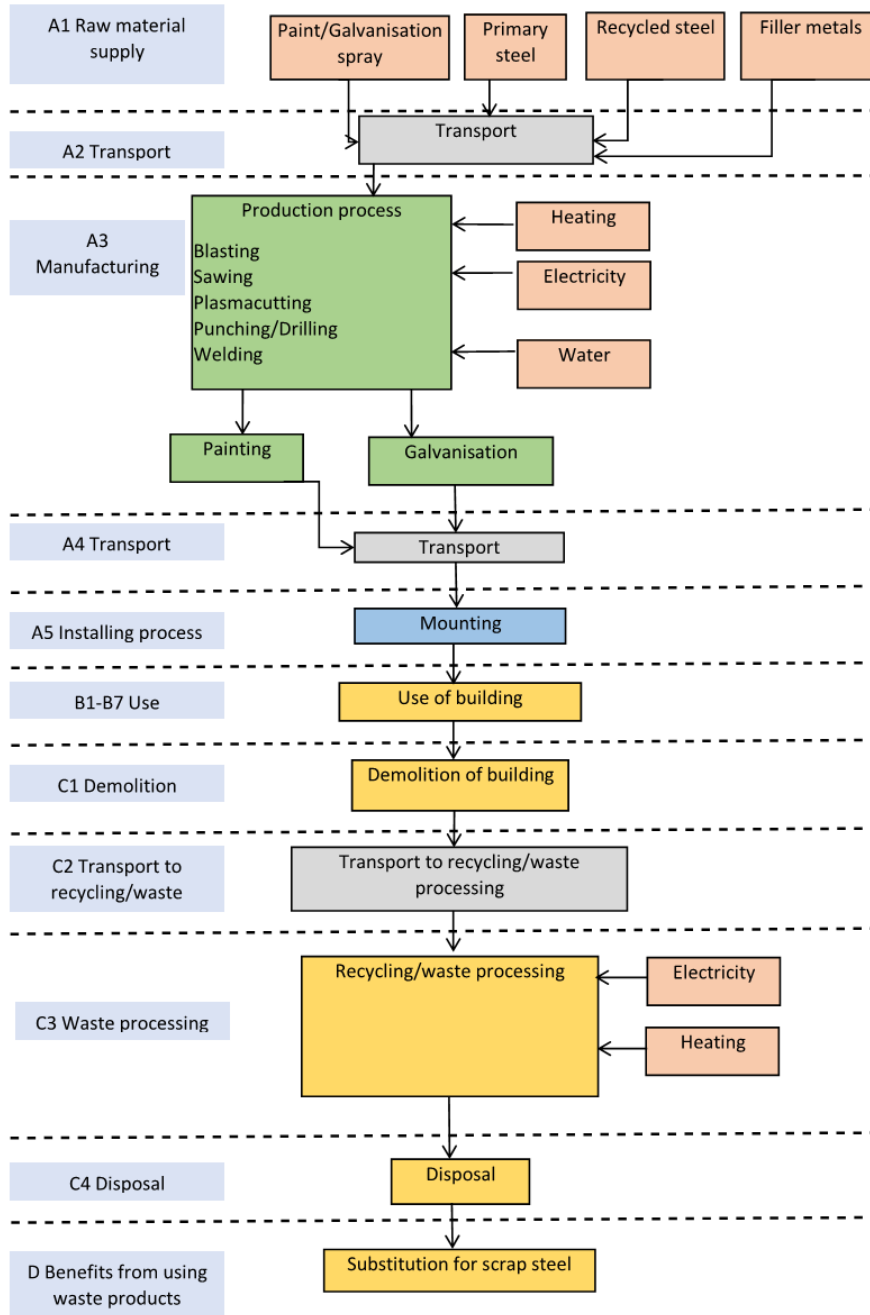
The results in this EPD relate to the average of 10% hollow sections, 45% plates and 45% beams with an average of 60% scrap.

Structural steel for projects is manufactured in accordance with the respective customer's requirements. Hence, the combination of hollow sections, plates and beams and thereby the value of scrap can differ from project to project. The combination can affect the outcome of the results.

PCR

This EPD is developed according to the core rules for the product category of construction products in EN 15804+A2 and NPCR – Part B for steel and aluminum construction products.

Flowdiagram



Colour coding; nude: inputs, grey: transport, green: production, blue: mounting, yellow: processes where DS Stålkonstruktion has no control.

System boundary

This EPD is based on a cradle-to-grave + module D LCA.

The general rules for the exclusion of inputs and outputs follow the requirements in EN 15804, 6.3.6. 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.

All information from the data collection process has been considered, covering all used and registered materials, thermal energy, electrical energy and diesel consumption. No processes, materials or emissions that are known to make a significant contribution to the environmental impact of the products studied have been excluded.

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.

When the steel materials enter DS Stålkonstruktion production facilities, the first process is blast cleaning of the steel to remove embers, rust and dirt. This is in order to be able to weld the single parts. The blasting machine uses small steel parts to blast the steel clean.

When the steel has been cleaned, as described above, it is cut out in accordance with the construction design requirements. This is done in four different ways: Sawing, plasma cutting, drilling and punching.

The cutting phase is divided into two main saw lines, two main plasma cutting lines, and other small lines with punching/drilling equipment.

After the cutting phase the structures is to be welded. The welding process is divided into three categories: Manual welding, automated welding and robot welding. The manual welding process is used for column/beam constructions, where it is difficult to apply automated and robot welding technologies. It is also used to finish the welding from the robots and automated weldings.

After the structures has been welded, it must be protected with surface treatment. DS Stålkonstruktion uses two main surface treatments: Painting and galvanisation. The painting process is an internal process. It contains a painting cabin, and a heating area, where the surface treatment is hardened. The galvanisation process is external.

Construction process stage (A4-A5) includes:

A4 – Transportation for deliveries of structural steel to a construction site in Scandinavia and the Northern part of Europe.

A5 – Installation of the steel structure using a truck.

Use stage (B1-B7) includes:

There are no activities in the use stage and therefore no associated environmental impacts.

End of Life (C1-C4) includes:

C1 – Deconstructing of the steel structure, using demolition equipment and vehicles on site.

C2 – Transportation of the demolished steel parts to a waste processing site.

C3 – Sorting of scrap steel. Paint from the steel structure is incinerated in this module.

C4 – There is assumed to be 1% loss in the recycling process, which is considered as landfilling steel scrap.

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

Refers to the possible benefits and loads from the end of life of the structural steel, including reuse and recycling. Module D is calculated as a scenario in which the net new steel scrap received in Module D is given an environmental burden. This burden is subtracted from this system as a

credit. Steel scrap that is credited is determined based on the following: net scrap = the amount of recycled steel at the end of life – scrap input from previous product life cycles.

When paint is burned, energy is extracted, and this energy is also credited in module D.

LCA results

LCA results for 1 ton painted structural steel

ENVIRONMENTAL IMPACTS PER TON										
Parameter	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	1,33E+03	1.15E+01	6.16E-01	0.00E+00	6.16E-01	8.50E+00	4,78E+01	1.88E-01	-6.64E+02
GWP-fossil	[kg CO ₂ eq.]	1,33E+03	1.12E+01	6.38E-01	0.00E+00	6.38E-01	8.34E+00	4,92E+01	1.94E-01	-6.64E+02
GWP-biogenic	[kg CO ₂ eq.]	-2,78E-01	1.22E-01	-2.61E-02	0.00E+00	-2.61E-02	9.06E-02	2,31E+00	-5.76E-03	-4.02E-01
GWP-luluc	[kg CO ₂ eq.]	1,24E+00	9.22E-02	4.61E-03	0.00E+00	4.61E-03	6.82E-02	2,89E-02	1.89E-04	9.02E-02
ODP	[kg CFC 11 eq.]	7,61E-12	2.09E-15	1.05E-16	0.00E+00	1.05E-16	1.55E-15	3,54E-06	4.30E-16	-1.14E-12
AP	[mol H ⁺ eq.]	3,41E+00	1.28E-02	3.12E-03	0.00E+00	3.12E-03	3.04E-02	3,12E-01	6.23E-04	-1.19E+00
EP-freshwater	[kg PO ₄ eq.]	2,03E-03	3.47E-05	1.74E-06	0.00E+00	1.74E-06	2.57E-05	2,09E-02	1.48E-07	-1.49E-04
EP-marine	[kg N eq.]	8,68E-01	3.86E-03	1.46E-03	0.00E+00	1.46E-03	1.38E-02	7,29E-02	1.51E-04	-1.79E-01
EP-terrestrial	[mol N eq.]	9,36E+00	4.59E-02	1.61E-02	0.00E+00	1.61E-02	1.54E-01	8,22E-01	1.66E-03	-1.74E+00
POCP	[kg NMVOC eq.]	2,77E+00	1.05E-02	4.07E-03	0.00E+00	4.07E-03	2.70E-02	2,22E-01	4.79E-04	-9.09E-01
ADPm ¹	[kg Sb eq.]	1,53E-04	9.21E-07	4.61E-08	0.00E+00	4.61E-08	6.82E-07	1,37E-03	1.31E-08	-5.15E-05
ADPf ¹	[MJ, net calorific value]	1,37E+04	1.52E+02	7.60E+00	0.00E+00	7.60E+00	1.12E+02	3,81E+02	2.77E+00	-5.80E+03
WDP ¹	[m ³ world eq. deprived]	-1,03E+02	1.11E-01	5.56E-03	0.00E+00	5.56E-03	8.22E-02	1,00E+01	-2.09E-03	-1.30E+02
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 = Acidification; 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 use									
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.									

Additional environmental impacts, as declared in the project report of this EPD, are declared in this EPD:

ADDITIONAL ENVIRONMENTAL IMPACTS PER TON										
Parameter	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
PM	[Disease incidence]	4,14E-05	8.64E-08	3.53E-08	0.00E+00	3.53E-08	1.74E-07	3,87E-06	6.72E-09	-2.00E-05
IRP ²	[kBq U235 eq.]	2,54E+01	4.15E-02	2.08E-03	0.00E+00	2.08E-03	3.07E-02	3,60E+00	4.66E-03	1.65E+01
ETP-fw ¹	[CTUe]	3,76E+03	1.14E+02	5.69E+00	0.00E+00	5.69E+00	8.42E+01	1,70E+03	8.24E-01	-1.08E+01
HTP-c ¹	[CTUh]	1,27E-06	2.35E-09	1.18E-10	0.00E+00	1.18E-10	1.74E-09	3,66E-08	9.49E-11	2.23E-07
HTP-nc ¹	[CTUh]	2,01E-05	1.19E-07	6.98E-09	0.00E+00	6.98E-09	1.01E-07	1,75E-06	9.50E-09	-9.00E-06
SQP ¹	-	3,56E+03	5.33E+01	2.67E+00	0.00E+00	2.67E+00	3.95E+01	7,01E+02	2.10E-01	1.70E+02
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)									

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.

RESOURCE USE PER TON										
Parameter	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
PERE	[MJ]	2,68E+03	8,78E+00	4,40E-01	0,00E+00	4,40E-01	6,50E+00	5,57E+01	1,94E-01	5,04E+02
PERM	[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
PERT	[MJ]	2,68E+03	8,78E+00	4,40E-01	0,00E+00	4,40E-01	6,50E+00	5,57E+01	1,94E-01	5,04E+02
PENRE	[MJ]	1,37E+04	1,53E+02	7,63E+00	0,00E+00	7,63E+00	1,13E+02	3,81E+02	2,77E+00	-5,80E+03
PENRM	[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
PENRT	[MJ]	1,37E+04	1,53E+02	7,63E+00	0,00E+00	7,63E+00	1,13E+02	3,81E+02	2,77E+00	-5,80E+03
SM	[kg]	5,89E+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
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
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
FW	[m ³]	1,05E+00	1,02E-02	5,12E-04	0,00E+00	5,12E-04	7,58E-03	2,35E-01	3,71E-05	-2,93E+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									

WASTE CATEGORIES AND OUTPUT FLOWS PER TON										
Parameter	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
HWD	[kg]	1,09E-04	7,05E-06	3,53E-07	0,00E+00	3,53E-07	5,22E-06	4,28E-08	1,26E-08	1,56E-06
NHWD	[kg]	1,42E+01	2,42E-02	1,21E-03	0,00E+00	1,21E-03	1,79E-02	3,34E+00	3,93E+00	6,89E+01
RWD	[kg]	2,74E-01	2,81E-04	1,41E-05	0,00E+00	1,41E-05	2,08E-04	5,10E-04	3,29E-05	-5,00E-03

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
MFR	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,89E+02	0,00E+00	0,00E+00
MER	[kg]	6,93E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,29E+01	0,00E+00	0,00E+00
EE	[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
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; EE = Exported energy									

BIOGENIC CARBON CONTENT PER TON		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	[kg C]	0
Biogenic carbon content in accompanying packaging	[kg C]	0
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂	

LCA results for 1 ton galvanised structural steel

ENVIRONMENTAL IMPACTS PER TON										
Parameter	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	1,49E+03	1.15E+01	6.16E-01	0.00E+00	6.16E-01	8.39E+00	2.33E+01	1.89E-01	-6.63E+02
GWP-fossil	[kg CO ₂ eq.]	1,48E+03	1.12E+01	6.38E-01	0.00E+00	6.38E-01	8.23E+00	2.47E+01	1.95E-01	-6.62E+02
GWP-biogenic	[kg CO ₂ eq.]	2,20E+00	1.22E-01	-2.61E-02	0.00E+00	-2.61E-02	8.95E-02	-1.13E-03	-5.79E-03	-4.29E-01
GWP-luluc	[kg CO ₂ eq.]	1,30E+00	9.22E-02	4.61E-03	0.00E+00	4.61E-03	6.74E-02	2.81E-02	1.89E-04	9.59E-02
ODP	[kg CFC 11 eq.]	7,77E-12	2.09E-15	1.05E-16	0.00E+00	1.05E-16	1.53E-15	3.54E-06	4.32E-16	-1.10E-12
AP	[mol H ⁺ eq.]	3,54E+00	1.28E-02	3.12E-03	0.00E+00	3.12E-03	3.00E-02	2.99E-01	6.25E-04	-1.19E+00
EP-freshwater	[kg PO ₄ eq.]	2,10E-03	3.47E-05	1.74E-06	0.00E+00	1.74E-06	2.54E-05	2.09E-02	1.49E-07	-1.35E-04
EP-marine	[kg N eq.]	9,15E-01	3.86E-03	1.46E-03	0.00E+00	1.46E-03	1.37E-02	6.79E-02	1.52E-04	-1.77E-01
EP-terrestrial	[mol N eq.]	9,79E+00	4.59E-02	1.61E-02	0.00E+00	1.61E-02	1.53E-01	7.66E-01	1.67E-03	-1.73E+00
POCP	[kg NMVOC eq.]	2,81E+00	1.05E-02	4.07E-03	0.00E+00	4.07E-03	2.67E-02	2.09E-01	4.82E-04	-9.07E-01
ADPm ¹	[kg Sb eq.]	3,13E-02	9.21E-07	4.61E-08	0.00E+00	4.61E-08	6.73E-07	1.37E-03	1.32E-08	-5.15E-05
ADPf ¹	[MJ]	1,59E+04	1.52E+02	7.60E+00	0.00E+00	7.60E+00	1.11E+02	3.70E+02	2.79E+00	-5.76E+03
WDP ¹	[m ³]	-8,07E+01	1.11E-01	5.56E-03	0.00E+00	5.56E-03	8.12E-02	6.97E+00	-2.10E-03	-1.30E+02
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 = Acidification; 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 use									
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.									

Additional environmental impacts, as declared in the project report of this EPD, are declared in this EPD:

ADDITIONAL ENVIRONMENTAL IMPACTS PER TON										
Parameter	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
PM	[Disease incidence]	4,24E-05	8.64E-08	3.53E-08	0.00E+00	3.53E-08	1.72E-07	3.78E-06	6.75E-09	-2.01E-05
IRP ²	[kBq U235 eq.]	2,82E+01	4.15E-02	2.08E-03	0.00E+00	2.08E-03	3.03E-02	3.52E+00	4.68E-03	1.74E+01
ETP-fw ¹	[CTUe]	3,45E+03	1.14E+02	5.69E+00	0.00E+00	5.69E+00	8.31E+01	1.70E+03	8.28E-01	9.91E+00
HTP-c ¹	[CTUh]	1,29E-06	2.35E-09	1.18E-10	0.00E+00	1.18E-10	1.72E-09	3.61E-08	9.53E-11	2.24E-07
HTP-nc ¹	[CTUh]	2,04E-05	1.19E-07	6.98E-09	0.00E+00	6.98E-09	1.00E-07	1.71E-06	9.55E-09	-9.01E-06
SQP ¹	-	3,69E+03	5.33E+01	2.67E+00	0.00E+00	2.67E+00	3.90E+01	6.98E+02	2.11E-01	2.20E+02
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)									
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.									

RESOURCE USE PER TON										
Parameter	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
PERE	[MJ]	2,80E+03	8.78E+00	4.40E-01	0.00E+00	4.40E-01	6.42E+00	5.37E+01	1.95E-01	5.30E+02
PERM	[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
PERT	[MJ]	2,80E+03	8.78E+00	4.40E-01	0.00E+00	4.40E-01	6.42E+00	5.37E+01	1.95E-01	5.30E+02
PENRE	[MJ]	1,60E+04	1.53E+02	7.63E+00	0.00E+00	7.63E+00	1.11E+02	3.70E+02	2.79E+00	-5.77E+03
PENRM	[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
PENRT	[MJ]	1,60E+04	1.53E+02	7.63E+00	0.00E+00	7.63E+00	1.11E+02	3.70E+02	2.79E+00	-5.77E+03

SM	[kg]	5,92E+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
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
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
FW	[m³]	1,16E+00	1.02E-02	5.12E-04	0.00E+00	5.12E-04	7.48E-03	1.62E-01	3.72E-05	-2.92E+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									

WASTE CATEGORIES AND OUTPUT FLOWS PER TON										
Parameter	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
HWD	[kg]	3,96E-05	7.05E-06	3.53E-07	0.00E+00	3.53E-07	5.16E-06	0.00E+00	1.26E-08	1.61E-06
NHWD	[kg]	1,51E+01	2.42E-02	1.21E-03	0.00E+00	1.21E-03	1.77E-02	0.00E+00	3.95E+00	6.93E+01
RWD	[kg]	3,07E-01	2.81E-04	1.41E-05	0.00E+00	1.41E-05	2.06E-04	0.00E+00	3.30E-05	2.09E-04

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
MFR	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.91E+02	0.00E+00	0.00E+00
MER	[kg]	6.93E+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
EE	[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
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; EE = Exported energy									

BIOGENIC CARBON CONTENT PER TON		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	[kg C]	0
Biogenic carbon content in accompanying packaging	[kg C]	0
Note	1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂	

Additional information

Technical information on scenarios

Transport to the building site (A4)

Scenario information	Value	Unit
Fuel type and consumption	3.7	L diesel
Transport distance	400	km
Capacity utilisation (including empty runs)	75	%
Gross density of products transported	7850	kg/m ³
Capacity utilisation volume factor	0.55	-

Installation of the product in the building (A5)

Scenario information	Value	Unit
Ancillary materials	0	kg
Water use	0	m ³
Other resource use	0	kg
Energy type and consumption (diesel fuel)	1.85	L
Waste materials	0	kg
Output materials	0	kg
Direct emissions to air, soil or water	0	kg

Reference service life

RSL information	Unit
Reference service Life	Depends on application

Use (B1-B7)

Modules not relevant

End of life (C1-C4)

Scenario information	Value	Unit
Collected separately	1000	kg
Collected with mixed waste	0	kg
For reuse	0	kg
For recycling	980 - 985	kg
For energy recovery	0 - 14.1	kg
For final disposal	3.9	kg

Re-use, recovery and recycling potential (D)

Scenario information/Materiel	Value	Unit
Credit for recycling of steel	389 - 391	kg

Indoor air

The EPD does not give information on release of dangerous substances to indoor air because the horizontal standards on measurement of release of regulated dangerous substances from construction products using harmonised test methods according to the provisions of the respective technical committees for European product standards are not available.

Soil and water

The EPD does not give information on release of dangerous substances to soil and water because the horizontal standards on measurement of release of regulated dangerous substances from construction products using harmonised test methods according to the provisions of the respective technical committees for European product standards are not available.

References

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General programme instructions

Version 2.0

www.epddanmark.dk

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ISO 14044

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