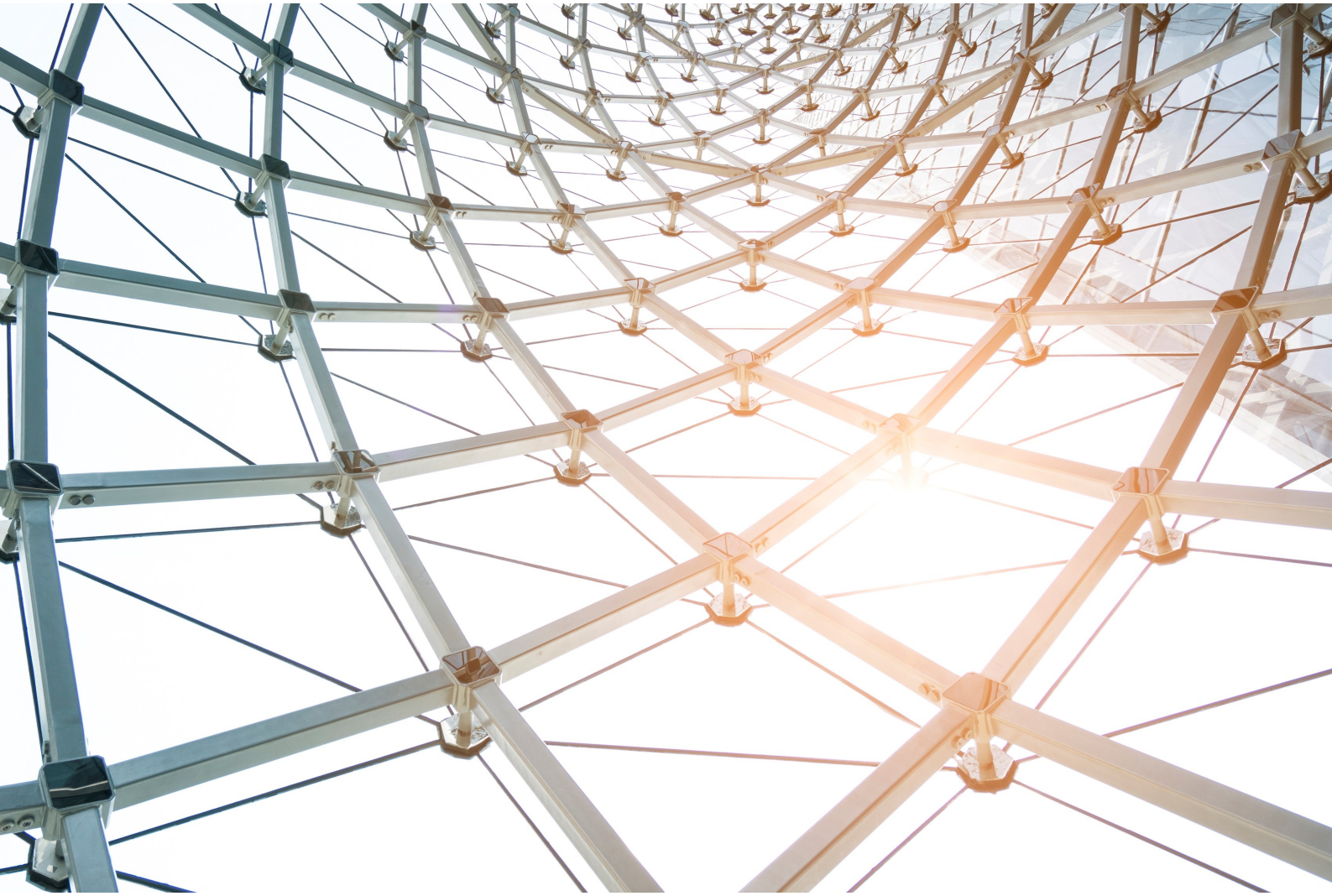
epd-norge
Global program operatør

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Fire protection system with SteelMaster 600WF, Jotun Paints (Europe) Ltd.



The Norwegian EPD Foundation

Owner of the declaration:
Jotun A/S

Product:
Fire protection system with SteelMaster 600WF, Jotun Paints (Europe) Ltd.

Declared unit:
1 m2

This declaration is based on Product Category Rules:
CEN Standard EN 15804:2012+A2:2019 serves as core PCR
IBU PCR Part B for coatings with organic binders

Program operator:
The Norwegian EPD Foundation

Declaration number:

Registration number:

Issue date:

Valid to:

EPD software:
LCAno EPD generator ID: 108917

General information

Product

Fire protection system with SteelMaster 600WF, Jotun Paints (Europe) Ltd.

Owner of the declaration:

Jotun A/S
Contact person: Cleo Alves Otterbech
Phone: +47 33 45 70 00
e-mail: cleo.otterbech@jotun.no

Program operator:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Phone: +47 977 22 020
web: www.epd-norge.no

Manufacturer:

Jotun Paints (Europe) Ltd

Declaration number:

Place of production:

Jotun Paints (Europe) Ltd
Stather Road Flixborough, Scunthorpe
DN15 8RR North Lincolnshire, United Kingdom

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR
IBU PCR Part B for coatings with organic binders

Management system:

ISO 9001:2008 Certificate nr: 0044915-00, ISO 14001:2004 Certificate nr 0044914-00, ISO 45001: 2018 Certificate nr: 0098139

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:

923 248 579

Declared unit:

1 m2 Fire protection system with SteelMaster 600WF, Jotun Paints (Europe) Ltd.

Issue date:

Declared unit with option:

A1-A3,A4,A5,B2,C1,C2,C3,C4,D

Valid to:

Year of study:

2023

Functional unit:

1 m^2 of structural steel well maintained for 50 years.

Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

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. Approval number: NEPDT07

Developer of EPD: Joaquin Quezada

Reviewer of company-specific input data and EPD: Cleo Alves Otterbech

Verification

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

Approved:

Third party verifier:



Anne Rønning, Norsus AS

Product

Product description:

SteelMaster 600WF is a one component waterborne acrylic thin film intumescent coating. It is independently approved for fire protection of structural steel exposed to cellulosic fire. It can be used as mid coat or finish coat in atmospheric environments. It is suitable on approved primers on carbon steel substrates.

The declared product is specially designed as a reactive fire protection system for steel constructions. It is designed to protect up to 90 minutes on a wide range of I section beams and columns. It is fire tested and approved to BS 476 part 20/21. It is suitable for structural steel exposed to internal environments.

SteelMaster 600WF requires one layer of a Primer e.g. Penguard Express - UK and one layer of Topcoat e.g. Hardtop XP - UK. An EPD for each products is published in www.epd-norge.no

For a detailed coating specification please contact your local Jotun representative.

Product specification

For information on Green Building Standard credits, see subchapter "Additional technical information".

The material composition of the declared product is given below:

Materials	Value	Unit
Filler	50 - 75	%
Water	25 - 50	%
Binder	10 - 25	%
Titanium dioxide	10 - 25	%
Solvent	1 - 3	%
Additive	0.3 - 1	%
Biocide	0 - 0.1	%

Technical data:

SteelMaster 600WF

Density: 1.4 g/cm^3
Solids by volume: 71 ± 3 volume%
Dry film thickness: 140 - 710 µm
Wet film thickness: 200 - 1000 µm
Theoretical spreading rate: 1.78 m^2/L (used for EPD calculations)

The most representative and worst case formulation produced at the manufacturing site is chosen for this EPD. For products with a selection of colours, this will be the formulation with the highest content of titanium dioxide.

The product packaging is based on an average sized metal packaging, including secondary packaging such as pallets and plastic wrapping.

For safety, health and environmental conditions, see the Safety Data Sheet for the declared product on www.jotun.com.

For information on technical data, application and use of the product, see the Technical Data Sheet for the declared product on www.jotun.com.

Market:

United Kingdom

Reference service life, product

The reference service life of the product is highly dependent on the conditions of application. The declared product system is installed to be maintenance-free for the lifetime of the object.

Estimated service life, object

The lifetime of the object is 50 years in this analysis.

LCA: Calculation rules

Declared unit:

1 m2 Fire protection system with SteelMaster 600WF, Jotun Paints (Europe) Ltd.

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 1%) are not 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 mass 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. The data 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 and different LCA databases. The data quality of the raw materials in A1 is presented in the table below.

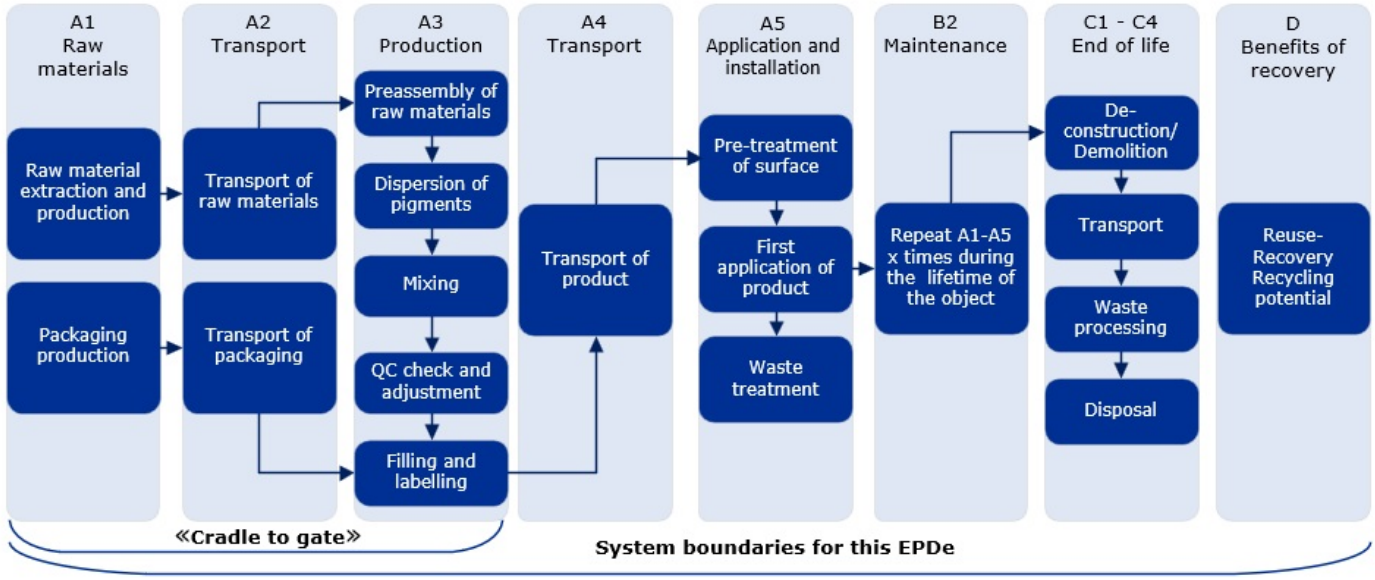
Materials	Source	Data quality	Year
Packaging	ecoinvent 3.6	Database	2019
Additives	CEPE RM Database v3.0	Database	2016
Binders and Resins	CEPE RM Database v3.0	Database	2016
Others	CEPE RM Database v3.0	Database	2016
Pigments and Fillers	CEPE RM Database v3.0	Database	2016
Solvent	CEPE RM Database v3.0	Database	2016

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	MND	X	MND	MND	MND	MND	MND	X	X	X	X	X

System boundary:

The flowchart in the figure below illustrates the system boundaries for the analysis, in accordance with the modular principle on EN 15804+A2. The analysis is a cradle-to-gate (A1-A3) study with options, in addition to module A4, transport to market, modules A5, B2, C1-C4 and module D are included.



Additional technical information:

The declared product contributes to Green Building Standard credits by meeting the following specific requirements:

SteelMaster 600WF
LEED®v4.1 (2020)/LEED®v4 (2013)
EQ credit: Low-emitting materials
- VOC content for Fire resistive coatings (150 g/l) (CARB(SCM)2020) and emission between 0.5 and 5.0 mg/m³ (CDPH method 1.2).
MR credit: Building product disclosure and optimization
- Environmental Product Declarations: Product-specific Type III EPD (ISO 14025;21930, EN 15804+A2) for Jotun Paints (Europe) Ltd.

BREEAM® International (2021)/BREEAM® International (2016)
- Mat 01: Product-specific Type III EPD (ISO 14025;21930, EN 15804+A2) for Jotun Paints (Europe) Ltd.

BREEAM-NOR v6.0 (2022)
- Mat 02: Product-specific Type III EPD (ISO 14025, ISO 21930, EN 15804+A2) for Jotun Paints (Europe) Ltd.

The credit contribution's for Penguard Express and Hardtop XP can be found in their own EPD in www.epd-norge.no.
Additional certificates and approvals may be available on request.

LCA: Scenarios and additional technical information

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

This is an operational cradle to gate (A1-A3) study with options, in additional module A4 transport to market, A5 application, B2 maintenance, modules C1 to C4 and module D have been included, as described below. The declared unit (DU) refers to the total amount of SteelMaster 600WF, Penguard Express and Hardtop XP required to protect 1 m2 of structural steel for its entire lifespan.

Modules A1-A3 background information is based on CEPE and EcoInvent databases. Where A1 accounts for each raw material in the formulation per 1 kg of product including the packaging. A2 accounts for the transport of raw materials, distance and type(s) of transport, they are collected from the manufacturing facility. A3 accounts for production data, the energy consumption and waste management are based on data from the manufacturing site.

Module A4 includes the transport of 1 kg of the declared unit with packaging from place of production to the market where the product is sold. The calculation is based on average distances to distribution centers in the local market. The declared product is assumed to be transported with the common type of truck used locally.

Module A5 is based on Application Guide and Technical Data Sheet for SteelMaster 600WF. A5 includes surface preparation, paint application, transport, waste treatment and direct emissions.

Prior to application, the surface will be cleaned with high pressure water jetting. It will then be pretreated with abrasive blasting to achieve the required roughness. Electricity, water, and sand for blasting are considered as inflows.

Products application: The following parameters were used to estimate the amount of each coating, the sum of them correspond to the DU:
SteelMaster 600WF: 1 layer; spreading rate = 1,78 m2/L; quantity = 0,8 kg/m2
Primer - Penguard Express: 1 layer; spreading rate = 8,51 m2/L; quantity = 0,2 kg/m2
Topcoat - Hardtop XP: 1 layer, spreading rate = 12,67 m2/L; quantity = 0,1 kg/m2
Declared unit = 1,1 kg/m2

Products application is modelled with extra 20% due to losses in a semi-covered area. It includes paints with their respective packaging, and transport.

The paint application is performed using Airless Spray for all three coatings. To estimate the amount of energy required by these spray guns, Graco Inc. insight and devices were used as reference. This does not limit the use of other tools/brands during the paint application phase.

The electricity mix used is from the United Kingdom, see Table Electricity Mix in Chapter Additional requirements. The Assembly A5 table shows the total amount of electricity consumed by different devices: water jetting, blasting process, and airless spray paint devices.

Waste generated in phase A5 is treated differently and there is a lack of data regarding its treatment. For this analysis we have assumed that 100% of paint waste (assumed as "dried paint residues" representing all 3 products), packaging waste (divided into 5 materials) and blasting media (assumed to be inert material) are sent to landfill. Transport to landfill is also considered and VOC emissions are modelled directly to air.

Module B2 maintenance is assumed to be "zero" as the paint system is designed to be maintenance-free for the whole lifetime of the object.

Module C considers the end-of-life of the construction material. The calculations for module C are based on dried/cured paint. Solvents and water are subtracted from the total coating mass due to the drying/curing processes occurring in modules A5 and B2. Similarly, packaging waste is generated in module A5 and B2, thus it is not accounted for in module C.

Module C1 is modelled with zero impact for the declared product. The coating is not removed from the substrate during decommissioning process, therefore the impact is allocated to the coated object.

Module C2 includes the transport of the paint waste to the closest disposal or waste treatment facility. It is assumed that the waste is transported by truck with characteristics listed in Table C2.

Module C3 is modelled with no waste paint processing.

Module C4, paint waste is gathered as part of the substrate in construction materials. A typical disposal scenario for paint applied on that substrate is landfill, therefore it is assumed that 100% of the paint waste is sent to landfill facilities.

Module D. Recycling of applied paint is not a common practice, therefore the reuse, recovery and recycling potential is set to zero.

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck Europe, over 32 tonnes, EURO 6 (km)	53,3 %	197	0,023	l/tkm	4,53

Assembly (A5)	Unit	Value			
Abrasive for blasting (kg)	kg/DU	45,00			
Dried paint residues landfill (kg)	kg/DU	0,16			
Electricity, United Kingdom (kWh)	kWh/DU	1,99			
Product loss during application (m2)	Units/DU	0,20			
Truck Europe, over 32 tonnes, EURO 6 (kgkm)	kgkm/DU	15,23			
VOC emissions to air (kg)	kg/DU	0,08			
Waste packaging, metal, average treatment (kg)	kg	0,13			
Waste packaging, plastic, mixture, to average treatment (kg)	kg	0,01			
Waste packaging, wood, average treatment (kg)	kg	0,00			
Waste packaing, cardboard and paper, to average treatment (kg)	kg	0,01			
Waste, inert waste, to landfill (kg)	kg/DU	45,00			
Water (L)	kg/DU	4,00			

Assembly (A5)	Unit	Value			
Airless spray Graco 60:1 Single leg pump, heated, for primer and topcoat	kWh/DU	Reference above			
Transport of total packaging waste for treatment	50	km			
Transport of paint waste for disposal	50	km			
Solid waste is disposed of in landfills	%	100			
Airless spray Graco 60:1 Single leg pump, no heat, for SteelMaster 900WF	kWh/DU	Reference above			
Abrasive for blasting	kg	45			

Maintenance (B2)	Unit	Value			
Maintenance (m2)	Units/DU	0,00			

De-construction demolition (C1)	Unit	Value			
Energy use during decommissioning	kWh/DU	0,00			

Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck Europe, over 32 tonnes, EURO 6 (km)	53,3 %	50	0,023	l/tkm	1,15

Waste processing (C3)	Unit	Value			
Waste treatment per kg Paint, municipal incineration, Europe (kg)	kg/DU	0,00			

Disposal (C4)	Unit	Value			
Waste treatment per kg Paint, inert material landfill, Europe (kg)	kg/DU	0,81			

Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of raw materials (kg)	kg/DU	0,00			

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	B2	C1	C2	C3	C4	D
	GWP-total	kg CO_2 -eq	3,76E+00	2,07E-02	3,22E+00	0,00E+00	0,00E+00	3,51E-03	0,00E+00	1,57E-02	0,00E+00
	GWP-fossil	kg CO_2 -eq	3,77E+00	2,07E-02	3,20E+00	0,00E+00	0,00E+00	3,51E-03	0,00E+00	1,57E-02	0,00E+00
	GWP-biogenic	kg CO_2 -eq	-7,53E-03	8,86E-06	1,62E-02	0,00E+00	0,00E+00	1,50E-06	0,00E+00	7,51E-06	0,00E+00
	GWP-luluc	kg CO_2 -eq	7,10E-04	6,30E-06	2,59E-03	0,00E+00	0,00E+00	1,07E-06	0,00E+00	5,18E-06	0,00E+00
	ODP	kg CFC11 -eq	8,91E-06	4,99E-09	2,14E-06	0,00E+00	0,00E+00	8,46E-10	0,00E+00	4,35E-09	0,00E+00
	AP	mol H+ -eq	2,87E-02	6,66E-05	1,72E-02	0,00E+00	0,00E+00	1,13E-05	0,00E+00	8,70E-05	0,00E+00
	EP-FreshWater	kg P -eq	1,68E-03	1,65E-07	4,22E-04	0,00E+00	0,00E+00	2,79E-08	0,00E+00	1,37E-07	0,00E+00
	EP-Marine	kg N -eq	4,97E-03	1,46E-05	3,86E-03	0,00E+00	0,00E+00	2,47E-06	0,00E+00	2,77E-05	0,00E+00
	EP-Terrestial	mol N -eq	4,06E-02	1,63E-04	4,07E-02	0,00E+00	0,00E+00	2,76E-05	0,00E+00	3,06E-04	0,00E+00
	POCP	kg NMVOC -eq	1,32E-02	6,39E-05	3,08E-02	0,00E+00	0,00E+00	1,08E-05	0,00E+00	9,13E-05	0,00E+00
	ADP-minerals&metals[1]	kg Sb-eq	4,34E-05	3,68E-07	2,87E-05	0,00E+00	0,00E+00	6,25E-08	0,00E+00	3,48E-07	0,00E+00
	ADP-fossil[1]	MJ	5,41E+01	3,36E-01	5,71E+01	0,00E+00	0,00E+00	5,70E-02	0,00E+00	2,91E-01	0,00E+00
	WDP[1]	m^3	2,68E+01	2,58E-01	3,19E+02	0,00E+00	0,00E+00	4,37E-02	0,00E+00	2,01E-01	0,00E+00

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

Remarks to environmental impacts

Additional environmental impact indicators

Indicator		Unit	A1-A3	A4	A5	B2	C1	C2	C3	C4	D
	PM	Disease incidence	3,37E-07	1,90E-09	1,94E-07	0,00E+00	0,00E+00	3,22E-10	0,00E+00	1,60E-09	0,00E+00
	IRP[2]	kgBq U235 -eq	2,05E+02	1,47E-03	4,16E+01	0,00E+00	0,00E+00	2,49E-04	0,00E+00	1,24E-03	0,00E+00
	ETP-fw[1]	CTUe	4,49E+01	2,46E-01	3,89E+01	0,00E+00	0,00E+00	4,17E-02	0,00E+00	1,97E-01	0,00E+00
	HTP-c[1]	CTUh	1,97E-08	0,00E+00	4,78E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,00E-12	0,00E+00
	HTP-nc[1]	CTUh	4,99E-07	2,37E-10	1,30E-07	0,00E+00	0,00E+00	4,00E-11	0,00E+00	1,90E-10	0,00E+00
	SQP[1]	dimensionless	2,44E+01	3,85E-01	6,49E+01	0,00E+00	0,00E+00	6,54E-02	0,00E+00	3,61E-01	0,00E+00

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	B2	C1	C2	C3	C4	D
	PERE	MJ	4,14E+00	4,23E-03	6,89E+00	0,00E+00	0,00E+00	7,17E-04	0,00E+00	3,39E-03	0,00E+00
	PERM	MJ	1,21E-01	0,00E+00	2,42E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	4,26E+00	4,23E-03	6,91E+00	0,00E+00	0,00E+00	7,17E-04	0,00E+00	3,39E-03	0,00E+00
	PENRE	MJ	7,29E+01	3,36E-01	6,31E+01	0,00E+00	0,00E+00	5,70E-02	0,00E+00	2,91E-01	0,00E+00
	PENRM	MJ	2,01E-01	0,00E+00	4,01E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	7,31E+01	3,36E-01	6,32E+01	0,00E+00	0,00E+00	5,70E-02	0,00E+00	2,91E-01	0,00E+00
	SM	kg	2,67E-02	0,00E+00	-4,50E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,22E-05	0,00E+00
	RSF	MJ	1,93E-02	1,48E-04	1,76E-01	0,00E+00	0,00E+00	2,51E-05	0,00E+00	1,09E-04	0,00E+00
	NRSF	MJ	1,21E-01	4,95E-04	2,18E-02	0,00E+00	0,00E+00	8,41E-05	0,00E+00	4,25E-04	0,00E+00
	FW	m^3	8,98E-01	3,82E-05	2,10E-01	0,00E+00	0,00E+00	6,49E-06	0,00E+00	1,45E-04	0,00E+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	B2	C1	C2	C3	C4	D
	HWD	kg	1,70E-02	1,84E-05	6,36E-03	0,00E+00	0,00E+00	3,12E-06	0,00E+00	1,80E-05	0,00E+00
	NHWD	kg	1,50E+00	2,92E-02	4,63E+01	0,00E+00	0,00E+00	4,96E-03	0,00E+00	8,14E-01	0,00E+00
	RWD	kg	1,06E-04	2,29E-06	2,96E-04	0,00E+00	0,00E+00	3,89E-07	0,00E+00	1,95E-06	0,00E+00

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	B2	C1	C2	C3	C4	D
	CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	kg	6,31E-03	0,00E+00	1,41E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,02E-05	0,00E+00
	MER	kg	2,19E-02	0,00E+00	8,74E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,44E-07	0,00E+00
	EEE	MJ	5,78E-03	0,00E+00	2,90E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,11E-06	0,00E+00
	EET	MJ	8,75E-02	0,00E+00	4,39E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,19E-05	0,00E+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	4,44E-03

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, United Kingdom (kWh)	ecoinvent 3.6	386,67	g CO2-eq/kWh

Dangerous substances

The product contains dangerous substances, more than 0,1% by weight, given by the REACH Candidate List, see table:

Name	CASNo	Amount
Melamine (SteelMaster 600 WF)	108-78-1	13.2%

Indoor environment

SteelMaster 600WF is emission tested by RISE Research Institutes of Sweden/SP Technical Research Institute of Sweden or Eurofins in accordance with California Department of Public Health (CDPH) Standard Method v1.2–2017.

Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products										
Indicator	**Unit**	A1-A3	A4	A5	B2	C1	C2	C3	C4	D
GWPIOBC	kg CO_2 -eq	3,79E+00	2,07E-02	3,41E+00	0,00E+00	0,00E+00	3,51E-03	0,00E+00	1,57E-02	0,00E+00

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.

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