epd-norge
Global program operatør

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

FKR-EU



TROX

The Norwegian EPD Foundation

Owner of the declaration:
TROX Group

Product:
FKR-EU

Declared unit:
1 pcs

This declaration is based on Product Category Rules:
CEN Standard EN 15804:2012+A2:2019 serves as core PCR
NPCR 030:2021 Part B for ventilation components

Program operator:
The Norwegian EPD Foundation

Declaration number:

Registration number:

Issue date:

Valid to:

EPD software:
LCAno EPD generator ID: 61692

General information

Product

FKR-EU

Owner of the declaration:

TROX Group
Contact person: Alina Buchner
Phone: +49 2845 2020
e-mail: productsustainability-de@troxgroup.com

Program operator:

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

Manufacturer:

TROX Group
Heinrich-Trox-Platz 1
47506 Neukirchen-Vluyn, Germany

Declaration number:

Place of production:

TROX SE - Werk Anholt
Gendringer Str. 85
46419 Isselburg, Germany

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR
NPCR 030:2021 Part B for ventilation components

Management system:

ISO 9001, ISO 14001:2015, ISO 50001:2018

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:

DE 120250070

Declared unit:

1 pcs FKR-EU

Issue date:

Declared unit with option:

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

Valid to:

Year of study:

2022

Functional unit:

Comparability:

EPDs of construction products may not be comparable if they do not comply with EN 15804 and are not 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.

Developer of EPD: Michael Weise

Reviewer of company-specific input data and EPD: Doeres Heuvens

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:

Alexander Borg, Asplan Viak AS

(no signature required)

Approved:

Product

Product description:

For large diameters, with or without a flange.

Large circular fire damper for the isolation of duct penetrations between 2 fire compartments, available in 9 nominal sizes.

For more informations see: https://www.trox.de/en/fire-dampers/fkr-eu-69c6216a6d944cc9

Product specification

Fire damper according to the European product standard EN 15650 in circular construction style.
Tested for fire resistance properties according to EN 1366-2, with CE label.
The fire damper manufacturer's declaration of performance (DoP) provides proof of the respective installation conditions, e. g. , in walls or ceilings, along with the basic characteristics such as size, support structure, design and installation type and the respective classes of performance in accordance with the classification standard EN 13501-3. Ready-to-use units contain a release mechanism and an interchangeable, fire-resistant damper blade that can be arranged horizontally or vertically and in all intermediate positions (0 - 360°) depending on the use.
Depending on application, classified from: EI 30 (ve, ho i <-> o) S to EI 120 (ve, ho i <-> o) S.
Suitable for:
Mortar-based installation.
In solid walls, walls made from gypsum wall boards, lightweight partition walls, compartment walls, safety partition walls and walls to provide radiation protection.
In shaft walls with metal support structures or steel support structures.
In timber stud walls and timber frame walls, as well as solid wood and cross laminated timber walls.
In and on solid walls and in combination with timber beam, solid wood and modular ceilings (System Cadolto).
In solid wood, wooden beam and historical wooden beam ceilings.
If several fire dampers are installed in a solid wall, ceiling slab, lightweight partition wall, timber stud wall and half-timbered wall, their combined area must not exceed.
Can be installed together with FK2-EU in solid walls and ceiling slabs, lightweight partition walls, timber stud walls, half-timbered walls and shaft walls.
Dry mortarless installation:
In lightweight partition walls and compartment walls with metal support structure and cladding on both sides with installation kit TQ.
In timber stud walls and timber frame walls, as well as solid wood and cross laminated timber walls with installation kit TQ.
In solid wood and wooden beam ceilings with installation kit TQ.
Fire batt installation.
In solid walls and ceiling slabs.
In lightweight partition walls, compartment walls, safety partition walls and walls to provide radiation protection, with metal support structure or steel support structure.
In timber stud walls, half-timbered constructions, solid wood walls and CLT walls.
Sizes from nominal size 315 mm - 800 mm.
Optimised low-leakage casing, up to leakage class C to EN 1751 with low differential pressure and low sound power level. Fire damper casing made of galvanised sheet steel, optionally galvanised sheet steel with powder coating RAL 7001 or stainless steel 1. 4301.
Damper blade made of special insulation material, optionally with coating.
Corrosion protection according to EN 15650 in connection with EN 60068-2-52. Hygienic requirements are fulfilled in accordance with VDI 6022-1, VDI 3803-1, DIN 1946-4, DIN EN 13779 as well as the Ö-norm H 6020 and H 6021 and the SWKI. Casing in spigot design (length 550 mm) or flange design (length 495 mm) for connection to ducts made of non-combustible or combustible building materials.
Thermal release for 72°C or 95°C (warm air ventilation systems) with a fusible link or thermoelectrically with a spring return actuator, push button and indicator light (LED). Constructions with a brushless actuator for opening and closing the fire damper, also when the ventilation system is running and independent of the nominal size, are particularly suitable for functional checks and for shutting off sections of the duct system.
Retrofit of spring return actuators without modification of the rod is possible from the outside.
Explosion-proof constructions for zones 1, 2, 21 and 22 available with limit switch or spring return actuator.
In the version with thermal insulation made of 32 mm synthetic cellular rubber, fire rating class: B-s2-d0, spring return actuator and perimeter mortar infill, suitable for reducing condensation in the case of outdoor air intake (ODA Outdoor air).

This EPD includes the environmental data of the produkt series FKR-EU.
The following represents a representative dataset of the most sold variant in the declared sales year (FKR-EU/400x550/Z45).

Materials	kg	%
Chemical	3,48	33,049
Fire-, heat- and UV-stabilizers	0,064	0,60
Glass fibre reinforced plastic, polyamide	0,012	0,11
Metal - Copper	0,0012	0,011
Metal - Galvanized Steel	4,67	44,40
Metal - Stainless steel	0,35	3,36
Metal - Steel	0,30	2,86
Motor	1,50	14,24
Plastic	0,047	0,44
Plastic - Polyamide	0,000050	0,00047
Plastic - Polybutylene terephthalate (PBT)	0,0030	0,028
Plastic - Polycarbonate (PC)	0,0012	0,011
Rubber, natural (Latex)	0,0082	0,077
Rubber, synthetic	0,080	0,76
Total	10,52	100,00

Packaging	kg	%
Packaging - Cardboard	3,62	22,45
Packaging - Pallet	12,50	77,47
Packaging - Plastic	0,01	0,07
Total incl. packaging	26,66	100,00

Technical data:

Nominal sizes: 315 – 800 mm.
Casing lengths: 495 and 550 mm.
Volume flow rate range: Up to 6000 l/s or 21600 m^3/h.
Differential pressure range: Up to 2000 Pa.
Temperature range (1, 3): -20 to 50 °C.
Release temperature: 72 °C or 95 °C (for warm air ventilation systems).
Upstream velocity (2):
Standard construction = 8 m/s.
Construction with spring return actuator = 12 m/s.
Construction with explosion-proof actuator ExMax/RedMax-15-BF TR = 10 m/s.

1 Temperatures may differ for units with attachments. Details for other applications are available on request.
2 Data applies to uniform upstream and downstream conditions for the fire dampers.
3 Condensation and the intake of humid fresh air have to be avoided as otherwise operation will be impaired or not be possible.

Market:

Europe.

Reference service life, product

20-25 years.

Reference service life, building or construction works

60 years.

LCA: Calculation rules

Declared unit:

1 pcs FKR-EU

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. Energy, 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:

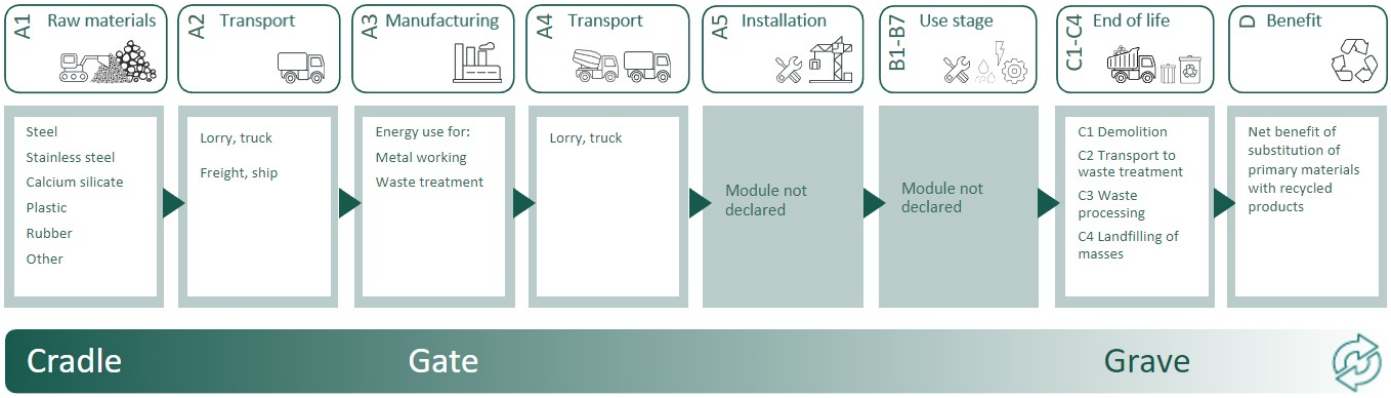
Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the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

Materials	Source	Data quality	Year
Chemical	ecoinvent 3.6	Database	2019
Fire-, heat- and UV-stabilizers	ecoinvent 3.6	Database	2019
Glass fibre reinforced plastic, polyamide	Modified ecoinvent 3.6	Database	2019
Metal - Copper	ecoinvent 3.6	Database	2019
Metal - Galvanized Steel	ecoinvent 3.6	Database	2020
Metal - Stainless steel	ecoinvent 3.6	Database	2019
Metal - Steel	ecoinvent 3.6	Database	2019
Motor	Modified ecoinvent 3.6	Database	2019
Packaging - Cardboard	ecoinvent 3.6	Database	2019
Packaging - Pallet	ecoinvent 3.6	Database	2019
Packaging - Plastic	ecoinvent 3.6	Database	2019
Plastic	ecoinvent 3.6	Database	2019
Plastic - Polyamide	ecoinvent 3.6	Database	2019
Plastic - Polybutylene terephthalate (PBT)	ecoinvent 3.6	Database	2019
Plastic - Polycarbonate (PC)	ecoinvent 3.6	Database	2019
Rubber, natural (Latex)	ecoinvent 3.6	Database	2019
Rubber, synthetic	ecoinvent 3.6	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	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

System boundary:



Additional technical information:

Large circular fire damper for the isolation of duct penetrations between 2 fire compartments, available in 9 nominal sizes.
Nominal sizes: 315 - 800 mm.
Low differential pressure and sound power level.
Flanges as an option.
Explosion-proof construction (ATEX) as an option.
Optionally available as an upstream shutter of an air transfer unit.
Optional stainless steel casing or powder-coated casing for increased corrosion protection.
Optionally available with thermal insulation to prevent condensation.
Integration into the central BMS with TROXNETCOM.
Optional equipment and accessories:
Electric actuator 24 V/230 V.
Release temperature 72/95 °C.
Useful additions:
Duct smoke detectors.

LCA: Scenarios and additional technical information

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

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km)	36,7 %	800	0,043	l/tkm	34,40

De-construction demolition (C1)	Unit	Value			
Demolition of building per kg of ventilation product (kg)	kg/DU	10,90			

Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km)	36,7 %	50	0,043	l/tkm	2,15

Waste processing (C3)	Unit	Value			
Waste treatment per kg Bulk iron waste, excluding reinforcement, sorting plant (kg)	kg	1,50			
Waste treatment per kg Rubber, municipal incineration with fly ash extraction (kg)	kg	0,044			
Waste treatment per kg Plastics, incineration (kg)	kg	0,031			
Materials to recycling (kg)	kg	6,15			
Waste treatment per kg Hazardous waste, incineration (kg)	kg	0,032			

Disposal (C4)	Unit	Value			
Landfilling of ashes from incineration of Plastics, process per kg ashes and residues (kg)	kg	0,00074			
Waste, plastic, mixture, to landfill (kg)	kg	0,076			
Waste, aluminium, to landfill (kg)	kg	0,0094			
Waste, hazardous waste, to average treatment - A3, inkl. transp. (kg)	kg	0,032			
Landfilling of ashes from incineration per kg Hazardous waste, from incineration (kg)	kg	0,0060			
Waste treatment per kg Copper slag, to landfill, residual material landfill (kg)	kg	0,024			
Waste, scrap steel, to landfill (kg)	kg	0,63			
Waste, hazardous waste, to landfill (kg)	kg	3,48			
Landfilling of ashes from incineration of Rubber, municipal incineration with fly ash extraction (kg)	kg	0,0023			

Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of primary aluminium with net scrap (kg)	kg	0,12			
Substitution of thermal energy, district heating (MJ)	MJ	0,92			
Substitution of primary copper with net scrap (kg)	kg	0,092			
Substitution of primary steel with net scrap (kg)	kg	2,14			
Substitution of electricity (MJ)	MJ	0,061			

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	C1	C2	C3	C4	D
	GWP-total	kg CO_2 -eq	4,29E+01	3,52E+00	1,44E-02	2,20E-01	2,86E-01	7,75E-01	-3,70E+00
	GWP-fossil	kg CO_2 -eq	4,22E+01	3,52E+00	1,44E-02	2,20E-01	2,85E-01	7,68E-01	-3,67E+00
	GWP-biogenic	kg CO_2 -eq	6,21E-01	1,45E-03	2,69E-06	9,09E-05	1,90E-04	6,96E-04	-7,32E-03
	GWP-luluc	kg CO_2 -eq	7,44E-02	1,25E-03	1,13E-06	7,82E-05	2,06E-05	6,59E-03	-2,21E-02
	ODP	kg CFC11 -eq	3,73E-06	7,96E-07	3,11E-09	4,98E-08	8,97E-09	4,13E-08	-3,90E-04
	AP	mol H+ -eq	4,06E-01	1,01E-02	1,50E-04	6,31E-04	1,38E-04	3,51E-03	-5,63E-02
	EP-FreshWater	kg P -eq	2,95E-03	2,81E-05	5,23E-08	1,76E-06	1,82E-06	3,32E-05	-4,38E-04
	EP-Marine	kg N -eq	5,26E-02	2,00E-03	6,64E-05	1,25E-04	3,37E-05	7,23E-04	-4,89E-03
	EP-Terrestial	mol N -eq	1,03E+00	2,24E-02	7,28E-04	1,40E-03	3,73E-04	7,66E-03	-5,88E-02
	POCP	kg NMVOC -eq	1,84E-01	8,57E-03	2,00E-04	5,35E-04	1,00E-04	3,72E-03	-2,17E-02
	ADP-minerals&metals[1]	kg Sb-eq	1,89E-02	9,71E-05	2,21E-08	6,07E-06	2,89E-07	4,25E-06	-2,47E-04
	ADP-fossil[1]	MJ	5,60E+02	5,32E+01	1,98E-01	3,32E+00	3,42E-01	8,32E+00	-3,57E+01
	WDP[1]	m^3	2,53E+03	5,14E+01	4,20E-02	3,21E+00	3,44E+00	7,49E+00	-4,88E+02

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	C1	C2	C3	C4	D
	PM	Disease incidence	3,98E-06	2,15E-07	3,98E-09	1,35E-08	1,79E-09	6,40E-08	-3,48E-07
	IRP[2]	kgBq U235 -eq	2,10E+00	2,32E-01	8,48E-04	1,45E-02	1,77E-03	1,31E-02	-5,45E-02
	ETP-fw[1]	CTUe	2,45E+03	3,94E+01	1,08E-01	2,46E+00	1,90E+00	2,71E+01	-4,90E+02
	HTP-c[1]	CTUh	2,02E-07	0,00E+00	0,00E+00	0,00E+00	7,50E-11	3,87E-09	-1,89E-08
	HTP-nc[1]	CTUh	2,94E-06	4,30E-08	9,80E-11	2,69E-09	6,46E-10	6,29E-08	-2,00E-07
	SQP[1]	dimensionless	2,33E+03	3,72E+01	2,51E-02	2,32E+00	1,39E-01	2,13E+01	-6,45E+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	C1	C2	C3	C4	D
	PERE	MJ	1,76E+02	7,61E-01	1,07E-03	4,76E-02	6,60E-02	2,89E+00	-7,87E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	3,79E+02	7,61E-01	1,07E-03	4,76E-02	6,60E-02	2,89E+00	-7,87E+00
	PENRE	MJ	5,60E+02	5,32E+01	1,98E-01	3,32E+00	3,42E-01	8,33E+00	-3,57E+01
	PENRM	MJ	4,78E+00	0,00E+00	0,00E+00	0,00E+00	-3,96E-01	0,00E+00	0,00E+00
	PENRT	MJ	5,61E+02	5,32E+01	1,98E-01	3,32E+00	-5,39E-02	8,33E+00	-3,57E+01
	SM	kg	5,85E+00	0,00E+00	9,72E-05	0,00E+00	1,65E-05	7,52E-02	6,48E-02
	RSF	MJ	2,26E+00	2,72E-02	2,63E-05	1,70E-03	1,45E-03	6,81E-03	8,91E-02
	NRSF	MJ	7,53E+00	9,73E-02	3,87E-04	6,08E-03	1,76E-05	6,64E-01	2,47E+00
	FW	m^3	4,77E-01	5,68E-03	1,02E-05	3,55E-04	4,72E-04	4,60E-03	-3,82E-02

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	C1	C2	C3	C4	D
	HWD	kg	3,63E-01	2,74E-03	5,82E-06	1,71E-04	1,92E-06	3,50E+00	-1,02E-02
	NHWD	kg	1,45E+01	2,58E+00	2,34E-04	1,62E-01	3,21E-02	7,56E-01	-1,39E+00
	RWD	kg	2,00E-03	3,62E-04	1,37E-06	2,26E-05	1,94E-07	7,26E-07	-5,25E-05

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	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
	MFR	kg	1,44E+00	0,00E+00	9,54E-05	0,00E+00	6,15E+00	6,98E-03	-2,54E-03
	MER	kg	1,70E-03	0,00E+00	2,96E-07	0,00E+00	7,66E-02	3,19E-06	-3,34E-04
	EEE	MJ	3,17E-02	0,00E+00	1,01E-06	0,00E+00	6,10E-02	2,30E-05	-8,18E-04
	EET	MJ	4,79E-01	0,00E+00	1,53E-05	0,00E+00	9,23E-01	3,47E-04	-1,24E-02

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	0,00E+00

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	Source	Amount	Unit
Electricity, market mix, Germany (kWh)	ecoinvent 3.6	585,93	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
Lead	7439-92-1	> 0.1% w/w
Lead monoxide (lead oxide)	1317-36-8	> 0.1% w/w
Diboron trioxide	1303-86-2	> 0.1% w/w
2-methylimidazole	693-98-1	> 0.1% w/w

Indoor environment

Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products								
Indicator	**Unit**	A1-A3	A4	C1	C2	C3	C4	D
GWPIOBC	kg CO_2 -eq	4,27E+01	3,52E+00	1,44E-02	2,20E-01	2,86E-01	1,17E-02	-4,70E+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.

Bibliography

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
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epd-norge Global program operatør	**Program operator and publisher** The Norwegian EPD Foundation Post Box 5250 Majorstuen, 0303 Oslo, Norway	Phone: e-mail: web:	+47 977 22 020 post@epd-norge.no www.epd-norge.no
TROX	**Owner of the declaration:** TROX Group Heinrich-Trox-Platz 1, 47506 Neukirchen-Vluyn, Germany	Phone: e-mail: web:	+49 2845 2020 productsustainability-de@troxgroup.com https://www.trox.de/en
LCA.no	**Author of the Life Cycle Assessment** LCA.no AS Dokka 6A, 1671 Kråkerøy, Norway	Phone: e-mail: web:	+47 916 50 916 post@lca.no www.lca.no
LCA.no	**Developer of EPD generator** LCA.no AS Dokka 6A, 1671 Kråkerøy, Norway	Phone: e-mail: web:	+47 916 50 916 post@lca.no www.lca.no
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