



LCA SUPPORT

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

FLUSH STEEL DOORS AND FLUSH FIRE RESISTANT
STEEL DOORS

DOORDEC OÜ



GENERAL INFORMATION

MANUFACTURER INFORMATION

Manufacturer	Doordec OÜ
Address	Rehepapi tee 27, Soinaste, Tartu, Estonia
Contact details	doordec@doordec.ee
Website	https://doordec.ee/

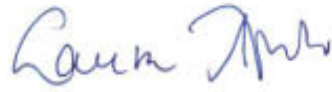
The Building Information Foundation RTS sr

The EPD owner has the sole ownership, liability, and responsibility for the EPD. Construction products EPDs may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

EPDs within the same product category but from different programmes may not be comparable.



Jukka Seppänen
RTS EPD Committee Secretary



Laura Apilo
Managing Director

EPD INFORMATION

EPD program operator	The Building Information Foundation RTS sr
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804 serves as the core PCR. In addition, the RTS PCR (English version, 26.8.2020) EN 17213 is used.
EPD author	Mari Kirss Rangi Maja OÜ www.lcasupport.com
EPD verification	Independent verification of this EPD and data, according to ISO 14025:2010: <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External
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ECO Platform nr.	
Publishing date	20.06.2023
EPD valid until	20.06.2028

PRODUCT INFORMATION

Product name	Flush steel doors Flush fire resistant steel doors
Place(s) of production	Estonia

PRODUCT DESCRIPTION

U3 and U4 are flush steel doors suitable for use in indoor and outdoor conditions. The door is constructed from metal sheet and filled with mineral wool.

TU7 and TU6 are fire rated flush steel doors. Fire rated doors are constructed from metal sheet and filled with mineral wool and gypsum board.

Different frame and threshold types (incl. wooden threshold, automatic drop down seal and brush seal).

Stainless steel hinges and threshold in standard solution.

Powder painted according to RAL Classic or NCS catalogue.

Window inside door leaf, kick plates, mail hatches, etc. are available as extras.

PRODUCT APPLICATION

Flush steel doors can be used as apartment doors, internal doors, external doors – in manufacturing buildings, offices, apartment buildings, and private residences.

Fire rated steel doors are primarily used as part of a fire resistant wall (to separate a basement floor, in a boiler room, in a switchboard room), as well as for separating other fire resistant zones.

TECHNICAL SPECIFICATIONS

Scenario parameter	Flushs steel door	Flush fire resistant steel door
Width	U3 400-1424 mm U4 650-2895 mm	TU7 400-1347 mm TU6 650-2378 mm
Height	U3 490-3134 mm U4 490-3134 mm	TU7 490-2512 mm TU6 490-2505 mm
Thermal transmittance	1.0 W/m ² K	1.0 W/m ² K
Sound resistance	U3 40 (-1;-2) dB U4 30 (-1;-2) dB	TU7 40 (-1;-2) dB, TU6 30(-1;-2) dB
Air permeability Class	4	4
Water resistance	Unprotected (A) class 5A	Unprotected (A) class 4A
Resistance to repeated opening and closing	200 000 cycles	200 000 cycles
Resistance to windload	C2	C2
Certificate	-	1336-CPR-0180

PRODUCT STANDARDS

EVS-EN 14351-1:2006+A2:2016

ADDITIONAL TECHNICAL INFORMATION

Further information can be found at doordec.com/products.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Flush steel door	Flush fire resistant steel door
Steel	84%	72%
Rock wool	14%	16%
Gypsum	0%	10%
Adhesives, gaskets, seals and surface coatings	2%	2%
Total	100%	100%

Raw material category	Amount, mass- % and material origin
Metals	84%, Europe (flush steel door) 72%, Europe (flush fire resistant steel)
Minerals	14%, Europe (flush steel door) 26%, Europe (flush fire resistant steel)
Fossil materials	2%, Europe (both products)
Bio-based materials	-

Biogenic carbon content	kg C per declared unit
Biogenic carbon content in product	0 kg (flush steel doors) 0.05 kg (flush fire resistant steel doors)
Biogenic carbon content in packaging	0 kg

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

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0.1 % (1000 ppm).

ABOUT THE MANUFACTURER

Doordec OÜ was established in 2010 based on Estonian capital. The company's principal activity is manufacturing of steel doors and windows. Our portfolio includes steel and stainless steel flush and profile doors, windows, wall sections, aluminium profile glass facades. In addition to manufacturing doors and windows, we also perform various works in the form of subcontracting. We also provide installation and maintenance services for our products. The products in the product portfolio are CE marked and the fire rated products are certified by Inspecta Estonia OÜ and Inspecta OY. 45% of our production is exported to Finland, Sweden, Denmark, Norway, and Iceland.

The production facilities of Doordec OÜ are located at Rehepapi tee 27, Soinaste, Tartumaa. The company employs 60 employees, most of them with long work experience in our field. We have a motivated team, a great work environment, and the facilities required for manufacturing high-quality products.

PRODUCT LIFE-CYCLE AND LIFE-CYCLE ASSESSMENT

Period for data	2022
Declared unit	1 m2
Mass per declared unit	Flush steel doors – 17.79 kg Flush fire resistant steel doors – 22.11 kg

The results are calculated per standard size elements according to EN 17213 and declared per 1 m2.

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR. The study does not exclude any hazardous materials or substances.

The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The data sources for the study are Ecoinvent 3.8 (2021). The tools used for the study were One Click LCA and Open LCA.

SYSTEM BOUNDARY

The scope of the EPD is cradle to gate, modules C1–C4 and module D.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D
x	x	x	MND	MND	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x	x	x
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR.

MANUFACTURING AND PACKAGING (A1-A3)

A 1 mm thick electro-galvanized, hot-dip galvanized or stainless steel sheet is used in the production of the door leaf and frame. The door is finished with powder coat and filled with mineral wool, as a result of which good sound and heat resistance have been achieved. There are different types of frames and thresholds, windows, ventilation grilles and kick plates can be added to the door leaf. The lock and other accessories can be added according to the customer's request.

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials.

Vehicle capacity utilization volume factor is assumed to be 1, which means full load. In reality, it may vary but as role of transportation emission in total results is small and so the variety in load is assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by transportation company to serve the needs of other clients.

Fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. All fuel and energy use was allocated based on production volume. The electricity used in the plant is grid energy and this has been modelled based on Estonian residual mix for 2020-2021. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

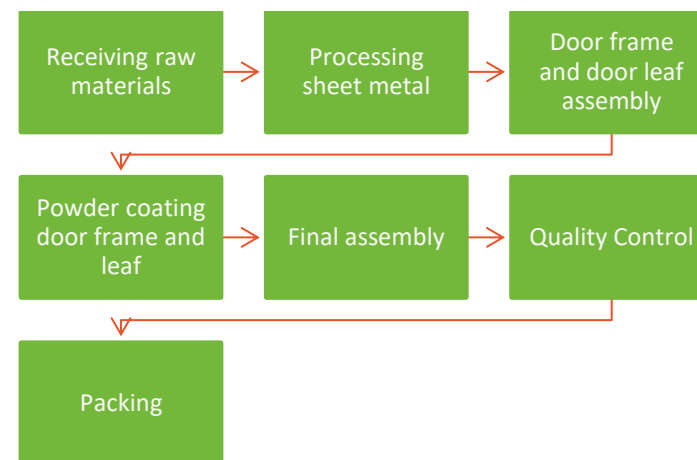
All waste that reaches end-of-waste state and is sold or used for co-products, have been allocated as co-products. The type of allocation used is economical allocation.

The Products are packaged using plastic film. The mass of the packaging is 0.01 kg per declared unit.

The Products or the packaging does not contain biogenic carbon.

The recycled material content of the steel sheets used in production is 85%.

Figure 1. Manufacturing process



Scenario parameter	Value
Electricity data source and quality	Modelled electricity based on Estonian residual mix for 2020-2021
Electricity CO _{2e} / kWh	0.6

TRANSPORT AND INSTALLATION (A4-A5)

A4 and A5 have not been declared.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.

Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

EOL scenarios have been based on default scenarios given in the standard EN 17213:2020 (Windows and doors - Environmental Product Declarations - Product category rules for windows and pedestrian doorsets). The scenarios are applicable to Europe.

It is assumed that 100% of the Products is collected. Demolition is not assumed to require any energy or resources.

95% of all materials are transported to waste treatment and 5% are landfilled.

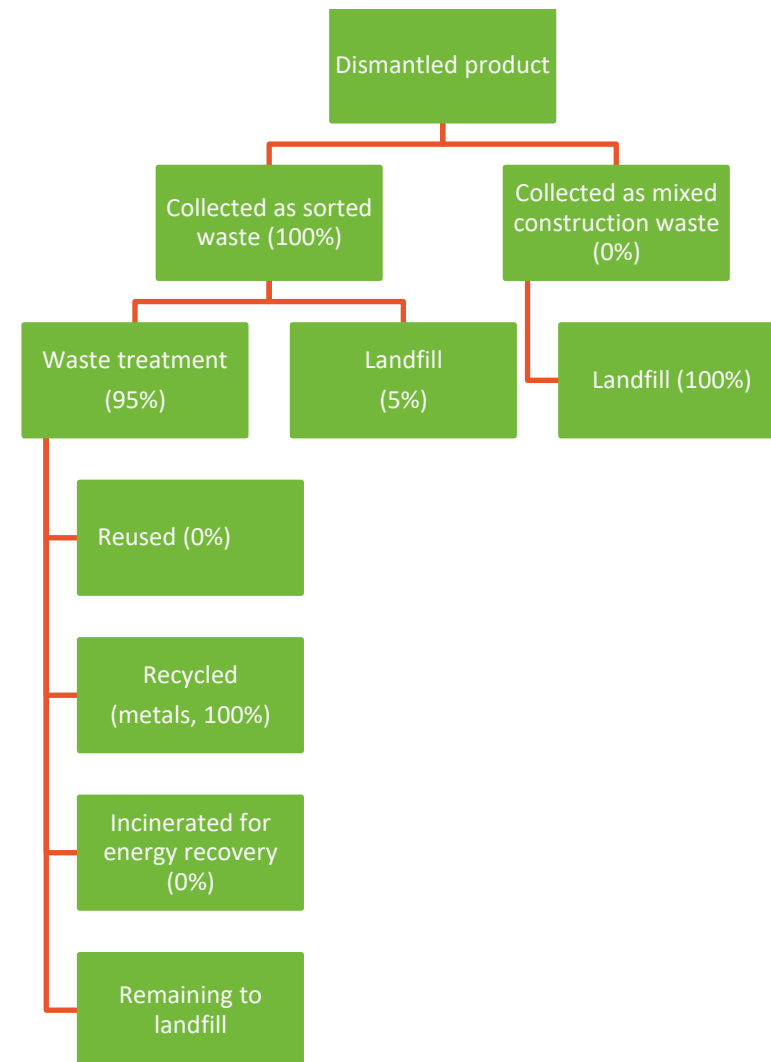
Waste treatment includes shredding and sorting for all materials.

The recycling rate for metals is assumed as 100%. All other materials are assumed to be sent to landfill.

It is assumed the metals in a furnace to make new steel.

When it comes to the steel door, around 80% of the total product is recycled and 20% is sent to landfill. For fire resistant steel door, around 68% of total product is recycled and 32% landfilled.

Figure 2. EOL scenario



Scenario parameter	Flush steel door	Flush fire resistant steel door
Collection process – kg collected separately	17.90	22.11
Collection process – kg collected with mixed waste	0	0
Recovery process – kg for re-use	0	0
Recovery process – kg for recycling	14.32	15.09
Recovery process – kg for energy recovery	0	0
Disposal (total) – kg for final deposition	3.57	7.02
Scenario assumptions e.g. transportation	Dismantled product is transported 250 km by lorry	

Any material that left the product system in C3 has been considered in module D. Only net benefits have been taken into account (the steel used in production is partially made from recycled raw materials). It is assumed the steel is melted in a furnace to make new steel.

Waste packaging from A5 has not been considered.

Module D scenario is representative of Europe.



FLUSH STEEL DOOR

ENVIRONMENTAL IMPACTS – CORE INDICATORS, EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Global warming potential – total	kg CO ₂ e	4.10E+1	5.96E+0	7.18E+0	5.41E+1	0.00E+0	7.61E-1	3.14E-1	3.93E-2	-2.49E+0
Global warming potential – fossil	kg CO ₂ e	4.10E+1	5.95E+0	7.17E+0	5.41E+1	0.00E+0	7.60E-1	3.13E-1	3.93E-2	-2.49E+0
Global warming potential – biogenic	kg CO ₂ e	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Global warming potential – LULUC	kg CO ₂ e	5.45E-2	3.82E-3	3.74E-3	6.21E-2	0.00E+0	2.91E-4	4.15E-4	3.93E-5	-2.76E-4
Ozone depletion pot.	kg CFC ₁₁ e	3.01E-6	1.14E-6	4.99E-7	4.65E-6	0.00E+0	1.70E-7	3.87E-8	1.14E-8	-9.37E-8
Acidification potential	mol H ⁺ e	2.41E-1	3.12E-2	3.25E-2	3.05E-1	0.00E+0	3.00E-3	4.01E-3	3.18E-4	-9.98E-3
Eutrophication potential - freshwater	kg Pe	2.21E-3	6.19E-5	1.94E-4	2.47E-3	0.00E+0	5.37E-6	1.72E-5	5.72E-7	-1.00E-4
Eutrophication potential - marine	kg Ne	4.27E-2	1.04E-2	4.90E-3	5.80E-2	0.00E+0	8.94E-4	8.45E-4	1.07E-4	-2.12E-3
Eutrophication potential - terrestrial	mol Ne	5.17E-1	1.15E-1	5.33E-2	6.86E-1	0.00E+0	9.84E-3	9.73E-3	1.18E-3	-2.49E-2
Photochemical ozone formation (“smog”)	kg NMVOCe	1.64E-1	3.34E-2	1.56E-2	2.13E-1	0.00E+0	3.04E-3	2.72E-3	3.43E-4	-1.26E-2
Abiotic depletion potential - minerals & metals	kg Sbe	3.73E-3	2.20E-5	1.96E-5	3.78E-3	0.00E+0	2.64E-6	4.15E-5	1.25E-7	-4.84E-5
Abiotic depletion potential - fossil resources	MJ	5.42E+2	8.44E+1	1.28E+2	7.55E+2	0.00E+0	1.10E+1	4.25E+0	8.57E-1	-2.10E+1
Water use	m ³ e depr.	2.98E+1	5.13E-1	9.66E-1	3.13E+1	0.00E+0	4.92E-2	8.25E-2	5.00E-3	-4.11E-1

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Renew. PER as energy	MJ	6.09E+01	1.80E+00	5.67E-01	6.33E+01	0.00E+00	1.57E-01	7.53E-01	1.50E-02	-1.69E+00
Renew. PER as material	MJ	0.0E+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
Total use of renew. PER	MJ	6.1E+01	1.80E+00	5.67E-01	6.33E+01	0.00E+00	1.57E-01	7.53E-01	1.50E-02	-1.69E+00
Non-re. PER as energy	MJ	5.4E+02	8.44E+01	1.23E+02	7.48E+02	0.00E+00	1.10E+01	4.25E+00	8.57E-01	-2.10E+01
Non-re. PER as material	MJ	1.8E+00	0.00E+00	3.43E+00	5.23E+00	0.00E+00	0.00E+00	0.00E+00	-1.80E+00	0.00E+00
Total use of non-re. PER	MJ	5.4E+02	8.44E+01	1.27E+02	7.54E+02	0.00E+00	1.10E+01	4.25E+00	-9.44E-01	-2.10E+01
Secondary materials	kg	1.8E+01	4.63E-02	8.97E-03	1.82E+01	0.00E+00	3.71E-03	4.72E-03	3.14E-04	3.47E+00
Renew. secondary fuels	MJ	3.2E-02	3.37E-04	2.68E-03	3.49E-02	0.00E+00	4.07E-05	2.43E-04	1.21E-05	-2.22E-04
Non-ren. secondary fuels	MJ	0.0E+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
Use of net fresh water	m ³	7.7E-01	1.35E-02	2.21E-02	8.03E-01	0.00E+00	1.39E-03	2.43E-03	9.29E-04	-3.56E-03

PER = Primary energy resources

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Hazardous waste	kg	1.51E+01	1.56E-01	2.14E-01	1.55E+01	0.00E+00	1.25E-02	2.89E-02	0.00E+00	-7.93E-01
Non-hazardous waste	kg	9.17E+01	2.53E+00	8.66E+00	1.03E+02	0.00E+00	2.19E-01	9.21E-01	3.57E+00	-3.97E+00
Radioactive waste	kg	2.00E-03	5.74E-04	4.50E-04	3.03E-03	0.00E+00	7.60E-05	2.43E-05	0.00E+00	1.60E-05

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Components for re-use	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
Materials for recycling	kg	0.00E+00	0.00E+00	2.88E+00	2.88E+00	0.00E+00	0.00E+00	1.43E+01	0.00E+00	0.00E+00
Materials for energy rec	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
Exported energy	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

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Global Warming Potential	kg CO ₂ e	4.01E+01	5.68E+00	7.05E+00	5.28E+01	0.00E+00	7.16E-01	3.09E-01	3.57E-02	-2.34E+00
Ozone depletion Potential	kg CFC ₁₁ e	2.77E-06	9.04E-07	4.42E-07	4.11E-06	0.00E+00	1.34E-07	3.15E-08	8.93E-09	-1.07E-07
Acidification	kg SO ₂ e	1.95E-01	2.38E-02	2.66E-02	2.46E-01	0.00E+00	2.33E-03	3.15E-03	2.39E-04	-8.31E-03
Eutrophication	kg PO ₄ ³ e	1.01E-01	5.86E-03	8.58E-03	1.15E-01	0.00E+00	5.37E-04	1.06E-03	7.86E-05	-4.09E-03
POCP ("smog")	kg C ₂ H ₄ e	1.23E-02	8.80E-04	1.23E-03	1.44E-02	0.00E+00	9.39E-05	1.22E-04	9.65E-06	-1.42E-03
ADP-elements	kg Sbe	3.73E-03	2.17E-05	1.95E-05	3.77E-03	0.00E+00	2.59E-06	4.15E-05	1.21E-07	-4.87E-05
ADP-fossil	MJ	5.42E+02	8.44E+01	1.28E+02	7.54E+02	0.00E+00	1.10E+01	4.25E+00	8.57E-01	-2.10E+01

KEY INFORMATION PER KG

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP – total	kg CO ₂ e	2.29E+00	3.33E-01	4.01E-01	3.03E+00	0.00E+00	4.25E-02	1.75E-02	2.20E-03	-1.39E-01
GWP – fossil	kg CO ₂ e	2.29E+00	3.33E-01	4.01E-01	3.02E+00	0.00E+00	4.25E-02	1.75E-02	2.20E-03	-1.39E-01
GWP – biogenic	kg CO ₂ e	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
ADP-minerals & metals	kg Sbe	2.09E-04	1.23E-06	1.10E-06	2.11E-04	0.00E+00	1.48E-07	2.32E-06	6.99E-09	-2.71E-06
ADP-fossil	MJ	3.03E+01	4.72E+00	7.16E+00	4.22E+01	0.00E+00	6.18E-01	2.38E-01	4.79E-02	-1.17E+00
Water use	m ³ e depr.	1.67E+00	2.87E-02	5.40E-02	1.75E+00	0.00E+00	2.75E-03	4.61E-03	2.80E-04	-2.30E-02
Secondary materials	kg	1.01E+00	2.59E-03	5.01E-04	1.02E+00	0.00E+00	2.08E-04	2.64E-04	1.76E-05	1.94E-01
Biog. C in product (A3)	kg C	N/A	N/A	0.00E+00	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging (A3)	kg C	N/A	N/A	0.00E+00	N/A	N/A	N/A	N/A	N/A	N/A

FLUSH FIRE RESISTANT STEEL DOOR

ENVIRONMENTAL IMPACTS – CORE INDICATORS, EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Global warming potential – total	kg CO ₂ e	4.56E+01	6.45E+00	7.24E+00	5.93E+01	0.00E+00	9.40E-01	3.31E-01	3.13E-01	-2.61E+00
Global warming potential – fossil	kg CO ₂ e	4.58E+01	6.45E+00	7.21E+00	5.95E+01	0.00E+00	9.40E-01	3.30E-01	7.73E-02	-2.61E+00
Global warming potential – biogenic	kg CO ₂ e	-2.58E-01	0.00E+00	2.26E-02	-2.36E-01	0.00E+00	0.00E+00	0.00E+00	2.36E-01	0.00E+00
Global warming potential – LULUC	kg CO ₂ e	5.97E-02	4.12E-03	3.78E-03	6.76E-02	0.00E+00	3.59E-04	4.38E-04	7.73E-05	-2.90E-04
Ozone depletion pot.	kg CFC-11e	3.43E-06	1.24E-06	5.02E-07	5.17E-06	0.00E+00	2.10E-07	4.07E-08	2.25E-08	-9.85E-08
Acidification potential	mol H ⁺ e	2.72E-01	3.40E-02	3.27E-02	3.39E-01	0.00E+00	3.70E-03	4.23E-03	6.25E-04	-1.05E-02
Eutrophication potential - freshwater	kg Pe	2.43E-03	6.68E-05	1.95E-04	2.69E-03	0.00E+00	6.63E-06	1.81E-05	1.12E-06	-1.05E-04
Eutrophication potential - marine	kg Ne	4.76E-02	1.13E-02	4.95E-03	6.39E-02	0.00E+00	1.11E-03	8.90E-04	2.11E-04	-2.22E-03
Eutrophication potential - terrestrial	mol Ne	5.81E-01	1.25E-01	5.38E-02	7.60E-01	0.00E+00	1.22E-02	1.03E-02	2.32E-03	-2.62E-02
Photochemical ozone formation (“smog”)	kg NMVOCe	1.83E-01	3.62E-02	1.58E-02	2.36E-01	0.00E+00	3.76E-03	2.87E-03	6.74E-04	-1.32E-02
Abiotic depletion potential - minerals & metals	kg Sbe	4.01E-03	2.38E-05	2.10E-05	4.05E-03	0.00E+00	3.26E-06	4.38E-05	2.46E-07	-5.08E-05
Abiotic depletion potential - fossil resources	MJ	6.07E+02	9.14E+01	1.29E+02	8.28E+02	0.00E+00	1.37E+01	4.48E+00	1.69E+00	-2.21E+01
Water use	m ³ e depr.	3.28E+01	5.54E-01	9.86E-01	3.44E+01	0.00E+00	6.08E-02	8.69E-02	9.83E-03	-4.32E-01

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Renew. PER as energy	MJ	6.82E+01	1.94E+00	6.17E-01	7.08E+01	0.00E+00	1.93E-01	7.94E-01	2.95E-02	-1.78E+00
Renew. PER as material	MJ	2.61E+00	0.00E+00	-1.30E+00	1.30E+00	0.00E+00	0.00E+00	0.00E+00	-1.30E+00	0.00E+00
Total use of renew. PER	MJ	7.08E+01	1.94E+00	-6.86E-01	7.21E+01	0.00E+00	1.93E-01	7.94E-01	-1.27E+00	-1.78E+00
Non-re. PER as energy	MJ	6.04E+02	9.14E+01	1.24E+02	8.20E+02	0.00E+00	1.37E+01	4.48E+00	1.69E+00	-2.21E+01
Non-re. PER as material	MJ	2.87E+00	0.00E+00	3.76E+00	6.62E+00	0.00E+00	0.00E+00	0.00E+00	-2.87E+00	0.00E+00
Total use of non-re. PER	MJ	6.07E+02	9.14E+01	1.28E+02	8.26E+02	0.00E+00	1.37E+01	4.48E+00	-1.18E+00	-2.21E+01
Secondary materials	kg	1.98E+01	4.99E-02	9.24E-03	1.99E+01	0.00E+00	4.59E-03	4.98E-03	6.18E-04	3.64E+00
Renew. secondary fuels	MJ	4.45E-02	3.64E-04	2.93E-03	4.78E-02	0.00E+00	5.03E-05	2.57E-04	2.39E-05	-2.34E-04
Non-ren. secondary fuels	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
Use of net fresh water	m ³	1.18E+00	1.46E-02	2.26E-02	1.21E+00	0.00E+00	1.71E-03	2.57E-03	1.83E-03	-3.74E-03

PER = Primary energy resources

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Hazardous waste	kg	1.62E+01	1.68E-01	2.16E-01	1.65E+01	0.00E+00	1.55E-02	3.05E-02	0.00E+00	-8.33E-01
Non-hazardous waste	kg	1.00E+02	2.73E+00	8.72E+00	1.12E+02	0.00E+00	2.71E-01	9.71E-01	7.02E+00	-4.17E+00
Radioactive waste	kg	2.19E-03	6.22E-04	4.52E-04	3.26E-03	0.00E+00	9.40E-05	2.57E-05	0.00E+00	1.68E-05

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Components for re-use	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
Materials for recycling	kg	1.66E-02	0.00E+00	3.29E+00	3.31E+00	0.00E+00	0.00E+00	1.51E+01	0.00E+00	0.00E+00
Materials for energy rec	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
Exported energy	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

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Global Warming Potential	kg CO ₂ e	4.48E+01	6.15E+00	7.08E+00	5.81E+01	0.00E+00	8.85E-01	3.25E-01	7.02E-02	-2.46E+00
Ozone depletion Potential	kg CFC-11e	3.20E-06	9.80E-07	4.44E-07	4.62E-06	0.00E+00	1.66E-07	3.32E-08	1.76E-08	-1.13E-07
Acidification	kg SO ₂ e	2.20E-01	2.59E-02	2.68E-02	2.73E-01	0.00E+00	2.87E-03	3.32E-03	4.71E-04	-8.73E-03
Eutrophication	kg PO ₄ ³ e	1.11E-01	6.34E-03	8.65E-03	1.26E-01	0.00E+00	6.63E-04	1.12E-03	1.55E-04	-4.30E-03
POCP ("smog")	kg C ₂ H ₄ e	1.39E-02	9.57E-04	1.25E-03	1.61E-02	0.00E+00	1.16E-04	1.28E-04	1.90E-05	-1.49E-03
ADP-elements	kg Sbe	4.07E-03	2.35E-05	2.09E-05	4.12E-03	0.00E+00	3.21E-06	4.38E-05	2.39E-07	-5.12E-05
ADP-fossil	MJ	6.07E+02	9.14E+01	1.29E+02	8.27E+02	0.00E+00	1.37E+01	4.48E+00	1.69E+00	-2.21E+01

KEY INFORMATION PER KG OF PRODUCT

Impact category	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP – total	kg CO ₂ e	2.06E+00	2.92E-01	3.27E-01	2.68E+00	0.00E+00	4.25E-02	1.50E-02	3.50E-03	-1.18E-01
GWP – fossil	kg CO ₂ e	2.07E+00	2.91E-01	3.26E-01	2.69E+00	0.00E+00	4.25E-02	1.49E-02	3.49E-03	-1.18E-01
GWP – biogenic	kg CO ₂ e	-1.17E-02	0.00E+00	4.45E-04	-1.12E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADP-minerals & metals	kg Sbe	1.81E-04	1.08E-06	9.49E-07	1.83E-04	0.00E+00	1.48E-07	1.98E-06	1.11E-08	-2.30E-06
ADP-fossil	MJ	2.75E+01	4.13E+00	5.83E+00	3.74E+01	0.00E+00	6.18E-01	2.03E-01	7.62E-02	-9.98E-01
Water use	m ³ e depr.	1.49E+00	2.50E-02	4.46E-02	1.55E+00	0.00E+00	2.75E-03	3.93E-03	4.45E-04	-1.95E-02
Secondary materials	kg	8.95E-01	2.26E-03	4.18E-04	8.98E-01	0.00E+00	2.08E-04	2.25E-04	2.79E-05	1.65E-01
Biog. C in product (A3)	kg C	N/A	N/A	2.04E-03	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging (A3)	kg C	N/A	N/A	0.00E+00	N/A	N/A	N/A	N/A	N/A	N/A

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