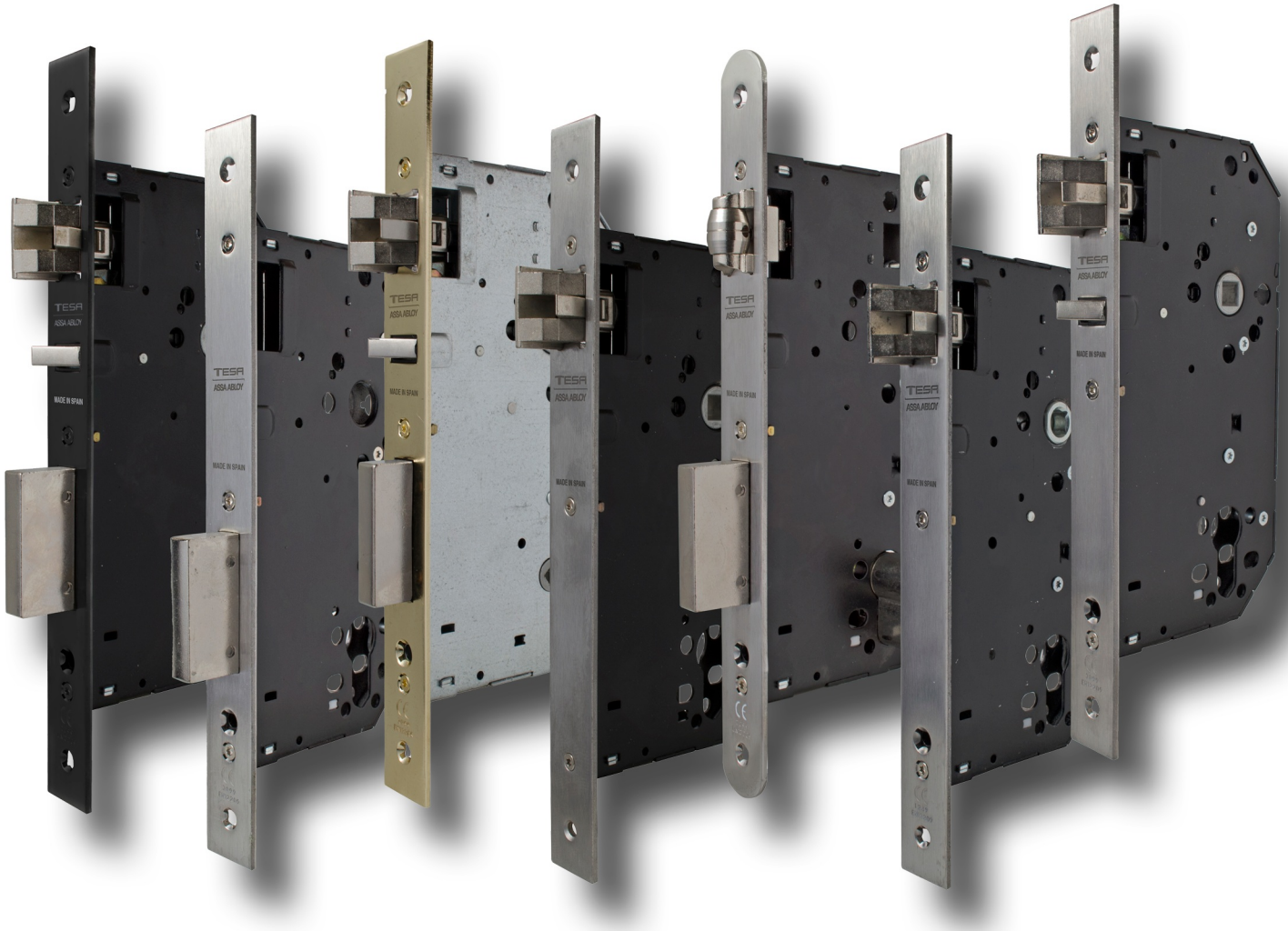

DAPcons®.100.145

DECLARACIÓN AMBIENTAL DE PRODUCTO
ENVIRONMENTAL PRODUCT DECLARATION

According to the standards:
ISO 14025 y EN 15804 + A2:2020

cateb
Arquitectura Tècnica
Barcelona

dapcons®

DECLARACIÓN AMBIENTAL DE PRODUCTO
ENVIRONMENTAL PRODUCT DECLARATION

DAPcons®.100.145

According to the standards:

ISO 14025 y EN UNE 15804 + A2:2020

GENERAL INFORMATION

Product

Average lock 2030F-2UB0F

Company

Product description

2030F and 2UB0F series locks by TESA ASSA ABLOY are a product that includes various models based on their function and specifications. These locks are mainly made of steel and aluminum which means that they offer excellent resistance in the event of fire and are effective protection against fire. They can be fitted with FR doors that prevent the transmission of smoke and gases, do not allow flames and heat to pass through and prevent ignition on the side not exposed to the fire.

The locks included in the EPD Average lock 2030F-2UB0F are: 2UB0F, 2UB1F, 2UB4F, 2UB5F, 2UB6, 2UB7F, 2UB9F, 2030F, 2035F, 2037F, 2038 and 2039F.

Reference RCP

RCP 100 (version 3 - 27/05/2021) Construction products in general

Production plant

Aranburuzabala Kalea, 23, 20540, Eskoriatza (Gipuzkoa, Basque Country)

Validity

From: 08/03/2023 Until: 08/03/2028

The validity of DAPcons®.100.145 is subject to the conditions of the regulation DAPcons®. The current edition of this DAPcons® is the one that appears in the registry maintained by Cateb; for informational purposes, it is included on the Program website www.csostenible.net

EXECUTIVE SUMMARY

Average lock 2030F-2UB0F

	DAPconstruction® Programme Operator Environmental Product Declarations in the Construction sector www.csostenible.net
	Programme Manager Colegio de la Arquitectura Técnica de Barcelona (Cateb) Bon Pastor, 5 · 08021 Barcelona www.apabcn.cat
	Owner of the declaration Talleres de Escoriaza SAU Barrio Ventas 35 20305 - GUIPUZCOA (España) www.tesa.es
	Author of the Life cycle assessment: ECOPENTA SL C/ Tuset 19, 1º 3ª, 08006 - BARCELONA, España

Declared product

Average lock 2030F-2UB0F

Geographic representation

Europe

Variability between different products

3,16%

Declaration number

DAPcons®.100.145

Issue date

15/09/2022

Validity

This verified declaration authorizes its holder to carry the logo of the operator of the ecolabelling program DAPconstruction®. The declaration is applicable exclusively to the mentioned product and for five years from the date of registration. The information contained in this statement was provided under the responsibility of: **Talleres de Escoriaza SAU**

Programme Administrator Signature

Celestí Ventura Cisternas. President of Cateb

Programme Verifier Signature

Josep Manuel Giner Pallarés. Verifier accredited by the administrator of the DAPcons® Programme

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ENVIRONMENTAL PRODUCT DECLARATION

1. DESCRIPTION OF THE PRODUCT AND ITS USE

2030F and 2UB0F series locks from TESA ASSA ABLOY are a product that includes various models based on their function and specifications.

These locks are mainly made of steel and aluminum which means that they offer excellent resistance in the event of fire and are effective protection against fire. They can be fitted with FR doors that prevent the transmission of smoke and gases, do not allow flames and heat to pass through and prevent ignition on the side not exposed to the fire.

The LCA and this environmental impact statement associated with the 2030F and 2UB0F series have been performed on the basis of the worst-case study in terms of number of components and weight of all the products in each series. Specifically, the LCA results of the 2030F and 2UB0F LOCKS, both manufactured in Eskoriatza, have been averaged. Each separately is the worst case of their respective series. When looking at the worst-case scenarios, this EPD is considered to cover all models in the two series. The locks included in the EPD are: 2UB0F, 2UB1F, 2UB4F, 2UB5F, 2UB6, 2UB7F, 2UB9F, 2030F, 2035F, 2037F, 2038 and 2039F.

TESA lock models with a code beginning with “2” are considered a kit consisting of a lock plus a cylinder. The cylinder is not included in this EPD since this is not considered necessary because it has its own EPD. The codes of locks without a built-in cylinder start with “4”.

None of the products contain substances on the REACH list of hazardous substances.

The general specifications of the product are as follows:

Series	**2030F**			**2UB0F**		
Lock type	Mortise lock for wooden doors			Mortise lock for wooden doors		
Latch	Reversible in steel			Reversible, silent latch in sintered steel. Profile of the latch: 17 mm (extra security)		
Distance between axes	85 mm			85 mm		
Backsets	50/60/70 mm			50/60/70 mm		
Steel follower	8 mm			8 mm		
Deadbolt follower	6 mm			6 mm		
Other features:	• Anti-panic function: standard spindles or split spindles • Security device			• By default, includes panic function • Complies with the UNE-EN 12209 standard. CE certified.		
Composition	**Material**	**g**	**%**	**Material**	**g**	**%**
	Steel	686.207	86.53	Steel	720.7195	87.09
	Aluminum	100.0223	12.61	Aluminum	100.0223	12.09
	Polyoxymethylene	0.6049	0.08	Polyoxymethylene	0.6049	0.07
	Brass	6.1944	0.78	Brass	6.1944	0.75
	TOTAL	793.0286	100.00	TOTAL	827.5411	100.00

The packaging for both series of locks has the following composition:

	g	%
Paper	20	14.49
Cardboard	111	80.43
Wood (pallet)	7	5.07
TOTAL	138	100

Lock 2030F

Lock 2UB0F

2. DESCRIPTION OF THE STAGES OF THE LIFE CYCLE

2.1. Manufacturing (A1, A2 y A3)

Raw Materials and transport (A1 y A2)

Module A1 includes the supply of raw materials for the product and packaging (raw materials to be processed in TESA's plant or components already formed by suppliers). The packaging also includes the instruction manual.

The representative lock consists mainly of chrome-plated steel components.

Module A2 includes the transport of raw materials and packaging to the TESA factory in Ezkoriatza (Guipuzkoa). The distance and type of truck has been entered for each raw material and packaging, the average calculated based on the distances to the various suppliers and weighted with the quantities delivered in 2021.

Manufacturing (A3)

Stage A3 considers the energy use of the production process, the production and transport of auxiliary materials (chemicals, varnishes, lubricants, etc.), the treatment of waste generated during production, and the emissions from the production process and the discharge analysis.

The manufacturing process is divided into the following phases:

• PHASE 1 - STAMPING PRESS
• PHASE 2 - VIBRATING
• PHASE 3 - SURFACE TREATMENT: tool cleaning, neutralization, flocculation, decanter, filter press and sludge storage.
• PHASE 4 - ASSEMBLY
• PHASE 5 - PACKAGING and SHIPPING

Once the product has been manufactured, it is packed for distribution

2.2. Construction process stage (A4 y A5)

Transport to the building site (A4)

The transport to the installation site stage has been calculated based on the weighting of 2021 sales (of the 2UB0F AND 2030F series) by country (with countries accounting for more than 1%) and theoretically according to the CPR of 3,500 km in a 16-32 tn EURO 6 truck for those countries accounting for less than 1%.

Table 1. Basic of a scenario with the parameters described in the following table

Destinations	Type of transport	Percentage	Average km
Spain	Truck 16-32 Tn EURO VI	0.37	386
Europe	Truck 16-32 Tn EURO VI	3.44	3579
Rest of the world	Truck 16-32 Tn EURO IV, VI, Container ship	96.18	100074.27

Product installation process and construction (A5)

According to the CPR, it can be assumed that manual installation is the default way to install hardware on doors and windows or directly in buildings. This entails zero impacts to be declared in module A5 arising from the installation itself. In particular, the lock is declared as a kit and includes the installation materials and so the production of all components is declared in A1.
Only the end-of-life impacts of the lock packaging (cardboard/paper and wooden pallet) are included at this stage. They are managed as follows in plants at a distance of 50 km from the installation site:
• Paper and cardboard waste: 85% recycling, 15% landfill (PEF, 2021).
• Wood waste (pallets): Pallets are reused an estimated average of 6 times (sector).

2.3. Product use (B1-B7)

Use (B1)

This module includes the environmental aspects and impacts in normal use of the products, not including water and energy use. As it is a passive construction material, the value of this module is 0.

Maintenance (B2)

The product under study does not require any significant maintenance during its operational lifetime.

Repair (B3)

It does not require any repairs during its operational lifetime when used properly.

Replacement (B4)

No product replacement is required given the timeframe set for this study.

Refurbishment (B5)

It does not require any kind of rehabilitation during its operational lifetime.

Operational energy use (B6)

It does not require any energy use during its operational lifetime.

Operational water use (B7)

It does not require any water use during its operational lifetime.

2.4. End of life (C1-C4)

Deconstruction and demolition (C1)

At the end of its operational life, the product will be removed during demolition. In the context of the demolition of a building, the impacts attributable to the removal of the product are negligible.

Transport to waste processing (C2)

The product waste is shipped by 16-32 ton truck complying with the Euro VI standard over a distance of 50 km to the treatment plant.

Waste processing for reuse, recovery and/or recycling (C3)

According to EUROSTAT> Recovery rate of construction and demolition waste, a recycling and recovery for reuse scenario of 90% is considered.
When a material is sent for recycling, the electricity usage of a crusher (corresponding to the process “Grinding, metals”) is taken into account.

Disposal (C4)

The remaining % not included in module C3 is expected to go to landfill: 10%.

2.5. Reuse/recovery/recycling potential (D)

The net impacts of recycling the lock have been considered as follows:
• Metal waste: 90% recycling.
The difference between the avoided impacts of no longer extracting virgin metal and the impact of the second metal transformation (scrap) is considered for the calculations.

3. LIFE CYCLE ASSESSMENT

Carrying out a “cradle to grave” Life Cycle Assessment, covering the stages of product manufacture, construction, use and end of life according to ISO 14040:2006 and ISO 14044:2006 of the products, taking into account the environmental impacts (UNE-EN 15804+A2:2019) according to the Product Category Rules PCR 100 Environmental Product Declaration for building hardware (v3 27.05.2021).
Supplemented with EN 17610 Building hardware - Environmental product declarations - Product category rules

complementary to EN 15804 for building hardware.
The application used is Simapro version 9.3.0.3, 2022.
Specific data from the manufacturing plant at Ezkoriatza (Gipuzkoa) for 2021 have been used to inventory the manufacturing stage. Generic data from the Ecoinvent v3.8 database have been used for the rest of the stages.

3.1. Functional Unit

The functional unit consists of:

A representative lock of the two locks 2030F and 2UB0F as two LCAs are carried out, one for each lock series, and then the results are averaged. The net mass of the 2030F series is 0,7930 kg and that of the 2UB0F series is 0,8275 kg during the reference service life of 30 years corresponding to a minimum of 200.000 use cycles". The average lock mass is 0,810.

Additional comments

-

3.2. Scope and modules that are declared

Table 2. Declared modules

Product stage			Construction Process Stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw materials supply	Transport	Manufacturing	Transport	Construction - Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	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	x	x	x	x	x	x	x	x	x	x	x	x

X = Declared module **MND** = Undeclared module

3.3. LCA results of potential environmental impact referred to the declared unit (ACV)

Table 3. Parameters of environmental impact

Parameter	Unit	Life cycle stage																Module D
		Product stage			Construction Process Stage		Use stage							End of life stage				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Climate change - total (GWP-total)	kg CO2 eq	5,27E+00	4,48E-03	1,29E+00	1,49E-01	4,50E-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	6,61E-03	1,79E-02	4,28E-04	-6,25E-01
Climate change - fossil (GWP-fossil)	kg CO2 eq	5,27E+00	4,47E-03	1,27E+00	1,49E-01	2,08E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,60E-03	1,82E-02	4,27E-04	-6,30E-01
Climate change - biogenic (GWP-biogenic)	kg CO2 eq	-1,05E-02	3,86E-06	6,61E-03	8,12E-05	4,20E-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	5,70E-06	-3,21E-04	4,23E-07	5,53E-03
Climate change - land use and changes in land use (GWP-luluc)	kg CO2 eq	7,90E-03	1,79E-06	3,87E-03	7,52E-05	6,06E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,64E-06	3,47E-05	4,03E-07	8,18E-05
Ozone layer depletion (ODP)	kg CFC 11 eq	2,73E-07	1,04E-09	2,72E-07	3,29E-08	6,31E-11	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,53E-09	2,42E-09	1,73E-10	-2,13E-08
Acidification (AP)	mol H+ eq	3,48E-02	1,27E-05	6,34E-03	1,91E-03	3,80E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,87E-05	2,17E-04	4,01E-06	-1,89E-03
Eutrophication of fresh water (EP-freshwater)	kg P eq	2,54E-03	2,93E-07	3,19E-04	8,16E-06	2,73E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,32E-07	1,15E-05	3,91E-08	-2,75E-04
Eutrophication of sea water (EP-marine)	kg N eq.	5,96E-03	2,58E-06	1,27E-03	4,78E-04	3,78E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,81E-06	4,91E-05	1,39E-06	-4,92E-04
Terrestrial eutrophication (EP-terrestrial)	mol N eq.	6,17E-02	2,81E-05	1,10E-02	5,30E-03	8,48E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,15E-05	5,50E-04	1,53E-05	-5,34E-03
Photochemical ozone formation (POCP)	kg NMVOC eq	1,87E-02	1,08E-05	3,50E-03	1,44E-03	1,27E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,60E-05	1,52E-04	4,44E-06	-3,47E-03
Depletion of abiotic resources - minerals and metals (ADP-minerals&metals)	kg Sb eq	4,03E-04	1,58E-08	1,22E-05	4,22E-07	1,39E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,34E-08	2,16E-06	9,73E-10	1,34E-06
Depletion of abiotic resources - fossil fuels (ADP-fossil)	MJ, net calorific value	6,30E+01	6,78E-02	2,34E+01	2,14E+00	5,33E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,00E-01	2,52E-01	1,19E-02	-4,98E+00
Water consumption (WDP)	m3 worldwide eq. private	2,22E+00	2,06E-04	6,85E-01	5,69E-03	2,79E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,04E-04	3,32E-03	5,36E-04	-4,79E-02
The Indicador includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This Indicador is thus equal to the GWP Indicador originally defined in EN 15804:2012+A1:2013. Can be obtained from IPCC characterization factors.																		
Global Warming Potential (GHG)	kg CO2 eq	5,19E+00	4,44E-03	1,25E+00	1,48E-01	2,81E-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	6,55E-03	1,80E-02	4,19E-04	-5,93E-01

A1 Supply of raw materials. **A2** Transport to waste processing. **A3** Manufacturing. **A4** Transport to waste processing. **A5** Installation and construction processes. **B1** Use. **B2** Maintenance. **B3** Repair. **B4** Replacement. **B5** Refurbishment. **B6** Operational energy use. **B7** Operational water use. **C1** Deconstruction and demolition. **C2** Transport to waste processing. **C3** Waste management for reuse, recovery and recycling. **C4** Fine removal. **D** Environmental benefits and burdens beyond the system boundary. **MND** Undeclared module.

Table 4. Parameters for the use of resources, waste and output material flows

Parameter	Unit	Life cycle stage																Module D
		Product stage			Construction Process Stage		Use stage							End of life stage				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Use of renewable primary energy excluding renewable primary energy resources used as feedstock	MJ, net calorific value	1,64E+01	9,69E-04	3,24E+00	2,59E-02	9,67E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,43E-03	3,91E-02	1,02E-04	2,57E-01
Use of renewable primary energy used as raw material	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renewable primary energy (primary energy and renewable primary energy resources used as feedstock)	MJ, net calorific value	1,64E+01	9,69E-04	3,24E+00	2,59E-02	9,67E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,43E-03	3,91E-02	1,02E-04	2,57E-01
Non-renewable primary energy use, excluding non-renewable primary energy resources used as feedstock	MJ, net calorific value	6,70E+01	7,20E-02	2,50E+01	2,28E+00	5,62E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,06E-01	2,67E-01	1,27E-02	-5,24E+00
Use of non-renewable primary energy used as raw material	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy (primary energy and renewable primary energy resources used as feedstock)	MJ, net calorific value	6,70E+01	7,20E-02	2,50E+01	2,28E+00	5,62E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,06E-01	2,67E-01	1,27E-02	-5,24E+00
Use of secondary materials	kg	1,47E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of renewable secondary fuels	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of non-renewable secondary fuels	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of freshwater resources	m3	2,18E+00	2,07E-04	6,82E-01	5,75E-03	2,55E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,06E-04	3,28E-03	5,37E-04	-4,59E-02
Hazardous waste removed	kg	1,09E-03	1,77E-07	2,89E-05	4,57E-06	6,49E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,61E-07	7,24E-07	1,80E-08	-8,37E-05
Non-hazardous waste eliminated	kg	5,18E+00	3,55E-03	3,90E-01	8,13E-02	1,98E-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	5,24E-03	7,74E-03	8,10E-02	8,74E-02
Radioactive waste disposed of	kg	2,02E-04	4,58E-07	1,02E-04	1,46E-05	3,99E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,76E-07	1,48E-06	7,81E-08	9,34E-06
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,26E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	4,06E+05	0,00E+00	2,08E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	#¡DIV/0!	0,00E+00	0,00E+00
Materials for energy recovery (energy recovery)	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,20E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ by energy vector	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

A1 Supply of raw materials.**A2** Transport to waste processing.**A3** Manufacturing.**A4** Transport to waste processing.**A5** Installation and construction processes.**B1** Use. **B2** Maintenance. **B3** Repair. **B4** Replacement.**B5** Refurbishment.**B6** Operational energy use.**B7** Operational water use.**C1** Deconstruction and demolition.**C2** Transport to waste processing.**C3** Waste management for reuse, recovery and recycling. **C4** Fine removal.**D** Environmental benefits and burdens beyond the system boundary.**MND** Undeclared module.

Table 5. Kg of biogenic carbon

Contenido Carbono (biogénico) - embalaje	0,33 kg
Contenido Carbono (biogénico) - producto	0 kg

3.4. Recommendations of this DAP

Construction products should be compared on the basis of the same functional unit and at building level, i.e. including the performance of the product over its entire life cycle.

Environmental product declarations of different type III eco-labeling schemes are not directly comparable as the calculation rules may be different. Product covered by this EPD: Locks 2UB0F, 2UB1F, 2UB4F, 2UB5F, 2UB6, 2UB7F, 2UB9F, 2030F, 2035F, 2037F, 2038 and 2039F.

3.5. Cut-off rules

General cut-off criteria are given in EN 15804, clause 6.3.5. This clause states that a maximum of 1% of the energy and raw material use per process unit can be excluded. This is provided that the total amount excluded does not exceed 5% of the total energy or material use for a module (A1, A2, A3, etc.).
More than 95% of all mass and energy inputs and outputs of the system have been included, leaving out auxiliary materials that account for less than 1% of the total material use in module A3.
Also, Infrastructure for machinery, production facilities and offices are estimated to contribute less than 1% and are therefore not included.
Allocation rules:
The polluter pays principle and the modularity principle (environmental burdens are allocated to the stage where the impact occurs) have been followed in the LCA.
Usage of energy, water, auxiliary materials and internal waste production has been allocated equally between all products through mass allocation (based on total production).

3.6. Additional environmental information

The lock is UNE-EN 12209:2004 and CE certified.
TESA ASSA ABLOY is ISO 9001 and ISO 14001 certified.

3.7. Other data

According to EUROSTAT>Recovery rate of construction and demolition waste, a recycling and recovery for reuse scenario of 90% and the remaining 10% to landfill is estimated.

4. ADDITIONAL TECHNICAL INFORMATION AND SCENARIOS

4.1. Transport to the building site (A4)

Parameter	Parameter expressed per functional unit
Type and fuel consumption, type of vehicle used for transportation	Road: Truck between 16 and 32 tons. Euro VI, uses 0.047 kg/ton/km diesel.
Distance	Transport by road and ship depending on sales in each country.
Capacity utilization (including empty return)	Road transport: 100% Ecoinvent 3.5 database-driven.
Apparent density of transported product	7,850 kg/m3.
Useful capacity factor (1, <1 or >1 for products that are packed compressed or nested)	1

4.2. Installation processes (A5)

Parameter	Parameter expressed per functional unit
Auxiliary materials for construction (specifying each material)	None
Water use	None
Use of other resources	None
Quantitative description of the type of energy (regional mix) and consumption during the installation process	NA
Waste of materials in the work before the treatment of waste, generated by the installation of the product (specify by type)	20 g Paper 111 g Cardboard 7 g Wood (pallet)
Material outputs (specified by type) as a result of waste treatment on the building site. For example: collection for recycling, energy recovery, disposal (specified by route)	• Paper and cardboard waste: 85% recycling, 15% landfill (PEF, 2021). • Wood: 100% reused – 6 reuses (Manufacturer data 2019).
Direct emissions to air, soil and water	NA

4.3. Reference life (B1)

Parameter	Parameter expressed per functional unit
Reference Lifetime (RSL)	30 years corresponding to a minimum of 200.000 use cycles
Characteristics and properties of the product	Lock 2030F-2UB0F

Parameter	Parameter expressed per functional unit
Requirements (conditions of use, frequency of maintenance, repair, etc.)	NA

4.4. Maintenance (B2), Repair (B3), Replacement (B4), or Rehabilitation (B5)

Maintenance (B2)

Parameter	Parameter expressed per functional unit
Maintenance process, for example; cleaning agent, surfactant type	NA
Maintenance cycle	NA
Auxiliary materials for the maintenance process (specifying each material)	None
Energy inputs for the maintenance process (quantity and type of energy vector)	None
Net consumption of fresh water during maintenance or repair	None
Material waste during maintenance (specifying the type)	NA

Repair (B3)

Parameter	Parameter expressed per functional unit
Repair process	NA
Proceso de inspección	NA
Repair cycle	NA
Auxiliary materials (specifying each material], for example lubricant	None
Interchange of parts during the product life cycle	None
Energy inputs during maintenance, type of energy, example: electricity, and quantity	None
Energy input during the repair, renovation, replacement process if applicable and relevant (quantity and type of energy vector)	None

Parameter	Parameter expressed per functional unit
Material waste during repair (specifying each material)	NA
Consumo neto de agua dulce	None

Replacement (B4)

Parameter	Parameter expressed per functional unit
Energy input during substitution, for example for the use of cranes (quantity and energy vector)	None
Change of worn parts in the product life cycle (specifying each material)	NA
Net freshwater consumption	None

Refurbishment (B5)

Parameter	Parameter expressed per functional unit
Rehabilitation process	NA
Rehabilitation cycle	NA
Energy input during rehabilitation, for example for the use of cranes (quantity and energy vector)	None
Input material for rehabilitation, including auxiliary materials (specifying by material)	None
Waste of material during rehabilitation (specifying each material)	None
Other scenario development assumptions	None

4.5. Reference life

Parameter	Parameter expressed per functional unit
Reference life	30 years corresponding to a minimum of 200.000 use cycles
Declared properties of the product, finishes, etc.	NA

Parameter	Parameter expressed per functional unit
Application design parameters (manufacturer's instructions)	NA
Estimation of the quality of execution, when installed according to the manufacturer's instructions	NA
Outdoor environment for outdoor applications. For example, weather, pollutants, UV radiation, temperature, etc.	NA
Indoor environment for indoor applications. For example, temperature, humidity, chemical exposure	NA
Terms of use. For example, frequency of use, mechanical exposure, etc.	NA
Maintenance. For example, the required frequency, etc.	NA

4.6. Operational energy use (B6) and operational water use (B7)

Parameter	Parameter expressed per functional unit
Auxiliary materials (specified by material)	None
Type of energy vector. For example, electricity, natural gas, district heating	NA
Equipment output power	None
Net freshwater consumption	None
Characteristic features (energy efficiency, emissions, etc.)	NA
Other scenario development assumptions. For example, transportation	NA

4.7. End of life (C1-C4)

	Process				
	Collection processes (specified by types)	Recovery systems (specified by type)			Elimination
	kg collected with mixed construction waste	kg for reuse	kg for recycling	kg for energy recovery	kg for final disposal
	0.810	0	0.729	0	0.081
Assumptions for scenario development	According to EUROSTAT>Waste for building products, a recycling and recovery scenario of 90% is considered for the reuse of the materials and the remaining 10% it is considered that goes to landfill.				

5. ADDITIONAL INFORMATION

6. RCP AND VERIFICATION

This statement is based on Document

RCP 100 (version 3 - 27/05/2021) Construction products in general

Independent verification of the declaration and data, in accordance with ISO 14025 and IN RCP 100 (version 3 - 27/05/2021)

☑ External

Third party Verifier

Josep Manuel Giner Pallarés

Accredited by the administrator of the DAPcons® Programme

Verification date:

09/05/2023

References

PRODUCT LIFE CYCLE ANALYSIS:

- AVERAGE LOCK 2030F-2UB0F

Programme Manager

Colegio de la Arquitectura Técnica de Barcelona (Cateb)
Bon Pastor, 5 · 08021 Barcelona www.apabcn.cat

The results of the Life Cycle Analysis of the two types of series from which the average has been made of are presented below:

- Lock 2030F
- Lock 2UB0F

Weight ratio:

Average lock	Lock 2030F	Lock 2UB0F
0,8100 kg	0,7930 kg	0,8275 kg

Lock 2030F

Parameter	Unit	Life Cycle Phase																Module D
		Manufacture			Construction		Use							End of Life				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Global warming total (GWP-total)	kg CO_2 eq	5,15E+00	4,28E-03	1,26E+00	1,18E-01	4,50E-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	6,47E-03	1,76E-02	4,18E-04	-6,11E-01
Global warming fossil fuels (GWP- fossil)	kg CO_2 eq	5,15E+00	4,28E-03	1,25E+00	1,18E-01	2,08E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,46E-03	1,78E-02	4,18E-04	-6,17E-01
Global warming - biogenic (GWP-biogenic)	kg CO_2 eq	-1,22E-02	3,69E-06	6,47E-03	8,41E-05	4,20E-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	5,58E-06	-3,14E-04	4,14E-07	5,41E-03
Gobal warming land use and land use change (GWP-luluc)	kg CO_2 eq	7,78E-03	1,71E-06	3,79E-03	5,33E-05	6,06E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,58E-06	3,40E-05	3,94E-07	8,01E-05
Ozone layer depletion (ODP)	kg CFC 11 eq	2,67E-07	9,91E-10	2,66E-07	2,68E-08	6,31E-11	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,50E-09	2,37E-09	1,69E-10	-2,09E-08
Acidification (AP)	mol H^+ eq	3,42E-02	1,22E-05	6,21E-03	9,19E-04	3,80E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,83E-05	2,12E-04	3,93E-06	-1,85E-03
Eutrophication - freshwater (EP-freshwater)	kg PO_4 eq	1,06E-02	2,09E-06	1,47E-03	1,09E-04	5,37E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,16E-06	5,42E-05	6,35E-07	-9,96E-04
Eutrophication - freshwater (EP-freshwater)	kg P eq	2,50E-03	2,80E-07	3,12E-04	7,14E-06	2,73E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,23E-07	1,13E-05	3,82E-08	-2,70E-04
Eutrophication - marine (EP-marine)	kg N eq.	5,84E-03	2,47E-06	1,24E-03	2,25E-04	3,78E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,73E-06	4,81E-05	1,37E-06	-4,81E-04
Eutrophication - terrestrial (EP-terrestrial)	mol N eq.	6,05E-02	2,69E-05	1,07E-02	2,49E-03	8,47E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,06E-05	5,39E-04	1,49E-05	-5,23E-03
Trophospheric Ozone Formation (POCP)	kg NMVOC eq	1,83E-02	1,03E-05	3,42E-03	7,18E-04	1,27E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,56E-05	1,49E-04	4,35E-06	-3,40E-03
Abiotic depletion for non-fossil resources (ADP-minerals&metals)	kg Sb eq	4,00E-04	1,52E-08	1,19E-05	3,79E-07	1,39E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,29E-08	2,11E-06	9,53E-10	1,32E-06
Abiotic depletion for fossil resources (ADP-fossil)	MJ, net calorific value	6,16E+01	6,48E-02	2,29E+01	1,75E+00	5,33E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,79E-02	2,46E-01	1,17E-02	-4,87E+00
Water user deprivation (WDP)	m^3	2,18E+00	1,97E-04	6,70E-01	5,01E-03	2,80E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,98E-04	3,25E-03	5,25E-04	-4,69E-02

Parameter	Unit	Life Cycle Phase																Module D
		Manufacture			Construction		Use							End of Life				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Global Warming Potential - GHG	kg CO2 eq	5,08E+00	4,25E-03	1,23E+00	1,17E-01	2,81E-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	6,41E-03	1,76E-02	4,10E-04	-5,81E-01

Parameter	Unit	Life Cycle Phase																Module D
		Manufacture			Construction		Use							End of Life				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Particulate Matter emissions (PM)	Disease incidence	4,04E-07	3,45E-10	2,87E-08	8,79E-09	3,63E-11	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,20E-10	2,85E-09	7,91E-11	-3,26E-08
Ionizing radiation, human health (IRP)	kBq U235 eq	5,71E-01	3,34E-04	3,45E-01	8,88E-03	7,62E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,04E-04	2,52E-03	5,18E-05	4,62E-02
Eco-toxicity (freshwater) (ETP-fw)	CTUe	2,49E+02	5,09E-02	2,81E+01	1,33E+00	9,83E-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	7,68E-02	9,03E-01	7,37E-03	-1,91E+01
Human toxicity, cancer effects (HTP-c)	CTUh	1,11E-07	1,64E-12	9,61E-10	4,93E-11	3,79E-13	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,47E-12	3,05E-11	1,87E-13	8,75E-09
Human toxicity, non-cancer effects (HTP-nc)	CTUh	2,21E-07	5,14E-11	2,10E-08	1,30E-09	6,67E-11	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,76E-11	1,33E-09	4,85E-12	-1,12E-08
Land use related impacts / Soil quality (SQP)	dimensionless	3,99E+01	4,52E-02	3,18E+00	1,09E+00	1,16E-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	6,82E-02	4,55E-01	2,45E-02	-6,42E-01

Parameter	Unit	Life Cycle Phase																Module D
		Manufacture			Construction		Use							End of life				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Use of renewable primary energy, exclouding the resources of non-renewable primary energy used as a raw materials	MJ, net calorific value	1,61E+01	9,27E-04	3,17E+00	2,32E-02	9,67E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,40E-03	3,83E-02	9,95E-05	2,51E-01
Use of renewable primary energy used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use a renewable primary energy (primary energy and resources of renewable primary energy used as raw materials)	MJ, net calorific value	1,61E+01	9,27E-04	3,17E+00	2,32E-02	9,67E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,40E-03	3,83E-02	9,95E-05	2,51E-01
Use of non-renewable primary energy, exclouding the resources of non-renewable primary energy used as a raw materials	MJ, net calorific value	6,56E+01	6,88E-02	2,45E+01	1,86E+00	5,62E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,04E-01	2,61E-01	1,24E-02	-5,12E+00
Use of non-renewable primary energy used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy (primary energy and resources of renewable primary energy used as raw materials)	MJ, net calorific value	6,56E+01	6,88E-02	2,45E+01	1,86E+00	5,62E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,04E-01	2,61E-01	1,24E-02	-5,12E+00
Use of secondary materials	kg	1,47E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of renewable secondary fuels	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of non-renewable secondary fuels	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water	m^3	2,14E+00	1,98E-04	6,68E-01	5,05E-03	2,55E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,00E-04	3,21E-03	5,25E-04	-4,50E-02
Hazardous waste disposed	kg	1,09E-03	1,69E-07	2,82E-05	4,18E-06	6,48E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,56E-07	7,09E-07	1,76E-08	-8,19E-05
Non-hazardous waste disposed	kg	5,06E+00	3,40E-03	3,81E-01	7,99E-02	1,98E-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	5,13E-03	7,58E-03	7,93E-02	8,56E-02
Radioactive waste disposed	kg	1,98E-04	4,38E-07	9,97E-05	1,19E-05	3,99E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,61E-07	1,45E-06	7,64E-08	9,14E-06
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,26E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	4,06E+05	0,00E+00	2,08E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,38*0,9	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,20E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ per vector	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Lock 2UB0F

Parameter	Unit	Life Cycle Phase																Module D
		Manufacture			Construction		Use							End of Life				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Global warming total (GWP-total)	kg CO_2 eq	5,39E+00	4,67E-03	1,31E+00	1,79E-01	4,50E-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	6,75E-03	1,83E-02	4,37E-04	-6,38E-01
Global warming fossil fuels (GWP- fossil)	kg CO_2 eq	5,38E+00	4,66E-03	1,30E+00	1,79E-01	2,08E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,74E-03	1,86E-02	4,36E-04	-6,44E-01
Global warming - biogenic (GWP-biogenic)	kg CO_2 eq	-8,90E-03	4,03E-06	6,75E-03	7,82E-05	4,20E-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	5,82E-06	-3,27E-04	4,32E-07	5,65E-03
Gobal warming land use and land use change (GWP-luluc)	kg CO_2 eq	8,01E-03	1,86E-06	3,95E-03	9,72E-05	6,07E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,69E-06	3,55E-05	4,12E-07	8,36E-05
Ozone layer depletion (ODP)	kg CFC 11 eq	2,79E-07	1,08E-09	2,78E-07	3,90E-08	6,31E-11	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,56E-09	2,47E-09	1,76E-10	-2,18E-08
Acidification (AP)	mol H^+ eq	3,55E-02	1,32E-05	6,48E-03	2,91E-03	3,80E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,91E-05	2,21E-04	4,10E-06	-1,93E-03
Eutrophication - freshwater (EP-freshwater)	kg PO_4 eq	1,10E-02	2,28E-06	1,53E-03	2,91E-04	5,37E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,29E-06	5,66E-05	6,63E-07	-1,04E-03
Eutrophication - freshwater (EP-freshwater)	kg P eq	2,59E-03	3,06E-07	3,26E-04	9,17E-06	2,74E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,42E-07	1,18E-05	3,99E-08	-2,81E-04
Eutrophication - marine (EP-marine)	kg N eq.	6,07E-03	2,69E-06	1,29E-03	7,31E-04	3,78E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,89E-06	5,02E-05	1,42E-06	-5,02E-04
Eutrophication - terrestrial (EP-terrestrial)	mol N eq.	6,29E-02	2,93E-05	1,12E-02	8,10E-03	8,48E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,24E-05	5,62E-04	1,56E-05	-5,46E-03
Trophospheric Ozone Formation (POCP)	kg NMVOC eq	1,90E-02	1,13E-05	3,57E-03	2,17E-03	1,27E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,63E-05	1,55E-04	4,54E-06	-3,55E-03
Abiotic depletion for non-fossil resources (ADP-minerals&metals)	kg Sb eq	4,06E-04	1,65E-08	1,24E-05	4,65E-07	1,39E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,39E-08	2,21E-06	9,94E-10	1,37E-06
Abiotic depletion for fossil resources (ADP-fossil)	MJ, net calorific value	6,44E+01	7,07E-02	2,39E+01	2,54E+00	5,34E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,02E-01	2,57E-01	1,22E-02	-5,08E+00
Water user deprivation (WDP)	m^3	2,26E+00	2,15E-04	6,99E-01	6,38E-03	2,79E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,11E-04	3,39E-03	5,48E-04	-4,89E-02

Parameter	Unit	Life Cycle Phase																Module D
		Manufacture			Construction		Use							End of Life				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Global Warming Potential - GHG	kg CO2 eq	5,31E+00	4,63E-03	1,28E+00	1,78E-01	2,81E-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	6,69E-03	1,84E-02	4,28E-04	-6,06E-01

Parameter	Unit	Life Cycle Phase																Module D
		Manufacture			Construction		Use							End of Life				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Particulate Matter emissions (PM)	Disease incidence	4,22E-07	3,76E-10	3,00E-08	1,10E-08	3,64E-11	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,43E-10	2,97E-09	8,25E-11	-3,40E-08
Ionizing radiation, human health (IRP)	kBq U235 eq	5,97E-01	3,64E-04	3,60E-01	1,24E-02	7,62E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,26E-04	2,63E-03	5,41E-05	4,82E-02
Eco-toxicity (freshwater) (ETP-fw)	CTUe	2,57E+02	5,55E-02	2,93E+01	1,82E+00	9,83E-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	8,02E-02	9,43E-01	7,69E-03	-2,00E+01
Human toxicity, cancer effects (HTP-c)	CTUh	1,16E-07	1,78E-12	1,00E-09	8,58E-11	3,82E-13	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,58E-12	3,18E-11	1,95E-13	9,14E-09
Human toxicity, non-cancer effects (HTP-nc)	CTUh	2,26E-07	5,61E-11	2,19E-08	1,63E-09	6,68E-11	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,10E-11	1,39E-09	5,06E-12	-1,17E-08
Land use related impacts / Soil quality (SQP)	dimensionless	4,14E+01	4,93E-02	3,32E+00	1,20E+00	1,16E-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	7,12E-02	4,74E-01	2,55E-02	-6,70E-01

Parameter	Unit	Life Cycle Phase																Module D
		Manufacture			Construction		Use							End of life				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Use of renewable primary energy, excloduing the resources of non-renewable primary energy used as a raw materials	MJ, net calorific value	1,68E+01	1,01E-03	3,31E+00	2,86E-02	9,67E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,46E-03	3,99E-02	1,04E-04	2,62E-01
Use of renewable primary energy used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use a renewable primary energy (primary energy and resources of renewable primary energy used as raw materials)	MJ, net calorific value	1,68E+01	1,01E-03	3,31E+00	2,86E-02	9,67E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,46E-03	3,99E-02	1,04E-04	2,62E-01
Use of non-renewable primary energy, excloduing the resources of non-renewable primary energy used as a raw materials	MJ, net calorific value	6,85E+01	7,51E-02	2,56E+01	2,69E+00	5,62E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,08E-01	2,72E-01	1,29E-02	-5,35E+00
Use of non-renewable primary energy used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy (primary energy and resources of renewable primary energy used as raw materials)	MJ, net calorific value	6,85E+01	7,51E-02	2,56E+01	2,69E+00	5,62E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,08E-01	2,72E-01	1,29E-02	-5,35E+00
Use of secondary materials	kg	1,47E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of renewable secondary fuels	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of non-renewable secondary fuels	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water	m^3	2,22E+00	2,16E-04	6,97E-01	6,45E-03	2,55E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,13E-04	3,35E-03	5,48E-04	-4,69E-02
Hazardous waste disposed	kg	1,09E-03	1,85E-07	2,95E-05	4,96E-06	6,49E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,67E-07	7,40E-07	1,84E-08	-8,55E-05
Non-hazardous waste disposed	kg	5,29E+00	3,70E-03	3,98E-01	8,28E-02	1,98E-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	5,35E-03	7,91E-03	8,27E-02	8,93E-02
Radioactive waste disposed	kg	2,06E-04	4,78E-07	1,04E-04	1,73E-05	4,00E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,90E-07	1,51E-06	7,98E-08	9,54E-06
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,26E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	4,06E-05	0,00E+00	2,08E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,38*0,9	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,20E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ per vector	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00