DAPcons®.100.172

DECLARACIÓN AMBIENTAL DE PRODUCTO
ENVIRONMENTAL PRODUCT DECLARATION

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

cateb
Arquitectura Tècnica
Barcelona

dapcons®

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GENERAL INFORMATION

Product

TD, TX and TK Cylinder Series

Company

Product description

The TD, TX and TK cylinder series are TESA-patented medium-high range mechanical cylinders for locking and unlocking doors. They are mechanisms which are inserted inside the locks with an internal combination with a key that allows their movement, activation and opening. The TD cylinder serie covers the medium-high range of cylinders and is a balanced solution in terms of performance and cost. TX and TK cylinder series are high security mechanical cylinders.

Reference RCP

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

Production plant

Final assembly: Ventas, 35, 20305 Irun (Gipuzkoa, Basque Country)

Validity

From: 14/02/2024 Until: 14/02/2029

The validity of DAPcons®.100.172 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

TD, TX and TK Cylinder Series

	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

TD, TX and TK Cylinder Series

Geographic representation

The raw materials used in the product are globally sourced. The product is manufactured in Irun (Guipuzkoa, Basque Country, Spain) and is distributed globally.

Variability between different products

>10%; it is therefore decided to declare the worst case scenario

Declaration number

DAPcons®.100.172

Issue date

18/01/2024

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

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Verifier Signature

Josep Manuel Giner Pallarés. ReMa-INGENIERIA, S.L.. Verifier accredited by the administrator of the DAPcons® Programme

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ENVIRONMENTAL PRODUCT DECLARATION

1. PRODUCT DESCRIPTION AND USE

TESA cylinders are classified according to four parameters:
• Type of key: Dimple or sawn.
• Non-copyable key
• Security level
• Masterkey capacity

The cylinders covered by this study are mainly made of brass, nickel silver and steel, and so they offer great value for money.

The TESA cylinders under study comply with the following standards and certifications:
• European Standard EN 1303:2016 Building hardware - Cylinders for locks - Requirements and test methods.
• The DIN standard specifying the requirements cylinders have to meet to obtain masterkeying certifications.
• Other standards or certifications: UL (USA), NEN (Netherlands) and SS (Sweden).

Series included in the scope of this study: TD, TK, TX.

The differences between the cylinders in the same series are mainly due to the dimensions and consequently the weight of the components.

The general features of the products under study for each of the three series are as follows:

• The TD60 is a PATENTED cylinder that covers the medium range of TESA cylinders
- Type of key: Flat reversible (nickel-plated brass)
- Number of rows: 1
- Number of pins: 6
- Technology: Tumbler
- Key related security: Grade 5
- Durability: 100,000 cycles
- 3 PATENTED keys per cylinder
- Finishes: Brass/Nickel
- Cams: DIN R15 or R13
- Available formats: Masterkey systems
- Wide range of sizes and profiles

• The TK6 is a high security cylinder
- Type: Patented sawn non-copyable key
- Number of rows: 1
- Number of pins: 6 + 1 security sensor
- Technology: KD-A Tumbler and AM DROP ORBITAL
- Key related security: Grade 6
- Lifespan: 100,000 cycles
- 3 nickel silver keys per cylinder
- Finishes: Brass and matt nickel
- Formats available: Key different (KD), key alike and specific codes (KA) and masterkeyed (MK)

- Wide range of sizes and profiles

• The TX80 is a high security cylinder
- Key type: Dimple , non-copyable and patented
- Number of rows: 2
- Number of pins: 8 + 2 security sensors in the key
- Technology: Double-diameter tumbler
- Key related security: Grade 6
- Lifespan: 100,000 cycles
- Clutch of double security
- 5 non-copyable nickel silver keys per cylinder
- Long collar
- Brass and nickel finishes
- Stainless steel version
- Cam: DIN R15 and R13 and gear wheels
- Option of masterkey, key alike and specific codes
- Wide range of sizes and profiles

Application:
TESA TD-TX-TK security cylinders are ideal for a wide range of applications, from private to commercial and public sector, for all types of doors:
• They fit all types of lock cases (mortise, narrow profile, and edge) and are compatible with knob sets, padlocks and ANSI cylinders.
• The TX-TK cylinder is also available in an electronic cylinder version (not included in the scope of this study) and can be combined with SMARTair escutcheons via an RFID key.

1.1 Content information

Product components

The product is mainly made of brass. A table is provided.

Packaging materials

Cardboard accounts for 90% of the total weight of the packaging. A table is provided.

PRODUCT TX856100N (TX series)

COMPONENTS	TOTAL (g)	%
Brass	354.29	64.16%
Steel	52.55	9.52%
Sintered steel	1.80	0.33%
Carbide CTS18D	1.00	0.18%
Nickel silver	105.12	19.04%
Bronze	0.004	0.001%
Zamak-5	37.40	6.77%
TOTAL	552.16	100.00%

PACKAGING MATERIALS	TOTAL (g)	%
Plastic	4.96	4.96
Paper	0.01	0.01
Cardboard	90.49	90.49
Cellulose pulp	23.70	23.70
Wooden pallet	1.66	1.66
TOTAL	120.81	120.81

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 TD-TK-TX Cylinder product consists mainly of brass, nickel silver, alloy steel and Zamak components.

Module A2 includes the transport of raw materials and packaging to TESA's factories in Irun (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 product is manufactured at TESA in Irun (Spain), although some components are purchased ready-made and only assembled.
Once final testing is completed, the cylinder is packed in cardboard boxes for the trip which are then put in travel boxes, and in turn these boxes are put in a box pallet for transport to their end destination.
The cylinder is packed in an individual transport box which also includes all the accessories required for its installation: User instructions, hardware, etc.

The manufacturing process can be summarized in the following phases:

- PHASE 1 – MACHINING, TURNING AND NICKEL PLATING OF THE BAR
- PHASE 2 - STAMPING AND EXTERNAL ZINC PLATING OF THE STRIP
- PHASE 3 – PURCHASING EXTERNAL COMPONENTS AND NICKEL PLATING OF SOME OF THEM
- PHASE 4 – SUBASSEMBLY ASSEMBLY
- PHASE 5 – MECHANICAL TESTING
- PHASE 6 – PACKAGING
- PHASE 7 – SHIPPING

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 all cylinders in the three TD, TK, TX series) by country 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	47.75	475
Europe	Truck 16-32 Tn EURO VI	45.35	750

Destinations	Type of transport	Percentage	Average km
Rest of the world	Truck 16-32 Tn EURO IV, VI and Container ship	6.9	12.580

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 machining of the door where it is installed.

This installation stage only includes the impacts of the end-of-life of the product packaging (cardboard, paper, film, and wooden pallet).

It is 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 six times (sector).
• Plastic waste: 42% recycling, 40% incineration, 18% landfill (Eurostat, 2021).

2.3. Product use (B1-B7)

Use (B1)

Once installed, the product does not require any material or energy input for use after installation.

Maintenance (B2)

Not required.

Repair (B3)

Under normal operating conditions, the product does not require any kind of repairs during its service life.

Replacement (B4)

Under normal operating conditions, the product does not require any kind of replacement during its service life.

Refurbishment (B5)

Under normal operating conditions, the product does not require any kind of rehabilitation during its service life.

Operational energy use (B6)

Mechanical cylinder. Once installed, the product does not require any energy input for use after installation.

Operational water use (B7)

The product does not require any water input for use.

2.4. End of life (C1-C4)

Deconstruction and demolition (C1)

At the end of its service 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's 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 cylinder 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 construction products in general (version 3 - 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 9.3.0.2, 2022.
Specific data from the manufacturing plant at Irún (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 of this study is defined as a TESA cylinder unit used over the reference service life of 15 years corresponding to a minimum of 100,000 use cycles.
The mass of the cylinder corresponds to the worst case: 552.16 g (worst case TX series).

For a geographical and technological environment of Spain in the year of production for 2021.

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	4,12E+00	7,58E-03	4,85E-02	8,29E-02	4,61E-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	4,50E-03	1,22E-02	2,91E-04	-4,25E-01
Climate change - fossil (GWP-fossil)	kg CO2 eq	4,08E+00	7,57E-03	4,82E-02	8,28E-02	7,69E-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	4,49E-03	1,24E-02	2,91E-04	-4,29E-01
Climate change - biogenic (GWP-biogenic)	kg CO2 eq	2,55E-02	6,54E-06	7,43E-05	6,82E-05	3,60E-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	3,88E-06	-2,18E-04	2,88E-07	3,77E-03
Climate change - land use and changes in land use (GWP-luluc)	kg CO2 eq	1,02E-02	3,03E-06	2,94E-04	3,42E-05	7,51E-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	1,80E-06	2,37E-05	2,75E-07	5,57E-05
Ozone layer depletion (ODP)	kg CFC 11 eq	2,66E-07	1,75E-09	4,84E-09	1,91E-08	6,27E-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	1,04E-09	1,65E-09	1,18E-10	-1,45E-08
Acidification (AP)	mol H+ eq	2,36E-01	2,15E-05	3,61E-04	3,35E-04	4,21E-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	1,28E-05	1,48E-04	2,73E-06	-1,29E-03
Eutrophication of fresh water (EP-freshwater)	kg P eq	1,07E-03	5,40E-08	2,00E-06	5,79E-07	4,86E-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	3,20E-08	6,03E-07	3,05E-09	-1,79E-05
Eutrophication of sea water (EP-marine)	kg N eq.	1,25E-02	4,27E-06	5,65E-05	7,16E-05	3,02E-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	2,54E-06	3,26E-05	9,45E-07	-3,10E-04
Terrestrial eutrophication (EP-terrestrial)	mol N eq.	1,74E-01	4,76E-05	5,94E-04	7,98E-04	1,21E-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	2,83E-05	3,75E-04	1,04E-05	-3,64E-03
Photochemical ozone formation (POCP)	kg NMVOC eq	4,75E-02	1,83E-05	1,88E-04	2,69E-04	1,22E-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	1,09E-05	1,03E-04	3,03E-06	-2,36E-03
Depletion of abiotic resources - minerals and metals (ADP-minerals&metals)	kg Sb eq	5,88E-03	2,68E-08	4,80E-07	2,86E-07	1,41E-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	1,59E-08	1,47E-06	6,63E-10	9,16E-07
Depletion of abiotic resources - fossil fuels (ADP-fossil)	MJ, net calorific value	5,29E+01	1,15E-01	1,06E+00	1,25E+00	5,20E-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	6,81E-02	1,71E-01	8,12E-03	-3,39E+00
Water consumption (WDP)	m3 worldwide eq. private	6,07E+00	3,49E-04	3,51E-02	3,74E-03	4,01E-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	2,07E-04	2,26E-03	3,65E-04	-3,26E-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	4,03E+00	7,51E-03	4,78E-02	8,22E-02	3,17E-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	4,46E-03	1,23E-02	2,86E-04	-4,04E-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	1,73E+01	1,64E-03	2,25E-01	1,75E-02	8,69E-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	9,74E-04	2,66E-02	6,93E-05	1,75E-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	1,73E+01	1,64E-03	2,25E-01	1,75E-02	8,69E-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	9,74E-04	2,66E-02	6,93E-05	1,75E-01
Non-renewable primary energy use, excluding non-renewable primary energy resources used as feedstock	MJ, net calorific value	5,64E+01	1,22E-01	1,11E+00	1,32E+00	5,50E-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	7,23E-02	1,82E-01	8,63E-03	-3,57E+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	5,64E+01	1,22E-01	1,11E+00	1,32E+00	5,50E-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	7,23E-02	1,82E-01	8,63E-03	-3,57E+00
Use of secondary materials	kg	1,27E-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	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	6,04E+00	3,51E-04	3,63E-02	3,76E-03	3,75E-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	2,08E-04	2,24E-03	3,66E-04	-3,13E-02
Hazardous waste removed	kg	2,56E-03	3,00E-07	9,72E-07	3,19E-06	9,11E-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	1,78E-07	4,94E-07	1,23E-08	-5,70E-05
Non-hazardous waste eliminated	kg	1,72E+00	6,01E-03	7,22E-03	6,32E-02	1,75E-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	3,57E-03	5,28E-03	5,52E-02	5,96E-02
Radioactive waste disposed of	kg	2,19E-04	7,75E-07	7,23E-06	8,44E-06	3,68E-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	4,60E-07	1,01E-06	5,32E-08	6,36E-06
Components for reuse	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
Materials for recycling	kg	0,00E+00	0,00E+00	6,00E-01	0,00E+00	9,33E-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	0,00E+00	4,97E-01	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	1,90E-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	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	1,03E-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

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

Carbon content (biogenic) - packaging	0,06 kg
Carbon content (biogenic) - product	0 kg

3.4. Recommendations of this EPD

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.

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.
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 product is certified as follows:
- RADIO EQUIPMENT DIRECTIVE 2014/53/EU
- RoHS 2 DIRECTIVE 2011/65/EU
- RoHS 3 DIRECTIVE 2015/863/EU
- UNE-EN 60529:2018 (IP56)
- EN15684
- Fire EN 1634-1:2014+A1:2018 (RF60).

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)	N/A
Water use	N/A
Use of other resources	N/A
Quantitative description of the type of energy (regional mix) and consumption during the installation process	N/A
Waste of materials in the work before the treatment of waste, generated by the installation of the product (specify by type)	1 g paper 23,7 g cellulose pulp 90,5 g cardboard 1,7 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). • Plastic waste: 42% recycling, 40% incineration, 18% landfill (Eurostat, 2021).
Direct emissions to air, soil and water	N/A

4.3. Reference life (B1)

Parameter	Parameter expressed per functional unit
Reference Lifetime (RSL)	15 years corresponding to a minimum of 100,000 use cycles

Parameter	Parameter expressed per functional unit
Characteristics and properties of the product	Mechanical cylinder
Requirements (conditions of use, frequency of maintenance, repair, etc.)	N/A

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

Maintenance (B2)

Parameter	Parameter expressed per functional unit
Maintenance process, for example; cleaning agent, surfactant type	N/A
Maintenance cycle	N/A
Auxiliary materials for the maintenance process (specifying each material)	N/A
Energy inputs for the maintenance process (quantity and type of energy vector)	N/A
Net consumption of fresh water during maintenance or repair	N/A
Material waste during maintenance (specifying the type)	N/A

Repair (B3)

Parameter	Parameter expressed per functional unit
Repair process	N/A
Proceso de inspección	N/A
Repair cycle	N/A
Auxiliary materials (specifying each material], for example lubricant	N/A
Interchange of parts during the product life cycle	N/A
Energy inputs during maintenance, type of energy, example: electricity, and quantity	N/A

Parameter	Parameter expressed per functional unit
Energy input during the repair, renovation, replacement process if applicable and relevant (quantity and type of energy vector)	N/A
Material waste during repair (specifying each material)	N/A
Consumo neto de agua dulce	N/A

Replacement (B4)

Parameter	Parameter expressed per functional unit
Energy input during substitution, for example for the use of cranes (quantity and energy vector)	N/A
Change of worn parts in the product life cycle (specifying each material)	N/A
Net freshwater consumption	N/A

Refurbishment (B5)

Parameter	Parameter expressed per functional unit
Rehabilitation process	N/A
Rehabilitation cycle	N/A
Energy input during rehabilitation, for example for the use of cranes (quantity and energy vector)	N/A
Input material for rehabilitation, including auxiliary materials (specifying by material)	N/A
Waste of material during rehabilitation (specifying each material)	N/A
Other scenario development assumptions	N/A

4.5. Reference life

Parameter	Parameter expressed per functional unit
Reference life	15 years corresponding to a minimum of 100,000 use cycles
Declared properties of the product, finishes, etc.	N/A
Application design parameters (manufacturer's instructions)	N/A
Estimation of the quality of execution, when installed according to the manufacturer's instructions	N/A
Outdoor environment for outdoor applications. For example, weather, pollutants, UV radiation, temperature, etc.	N/A
Indoor environment for indoor applications. For example, temperature, humidity, chemical exposure	N/A
Terms of use. For example, frequency of use, mechanical exposure, etc.	N/A
Maintenance. For example, the required frequency, etc.	N/A

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

Parameter	Parameter expressed per functional unit
Auxiliary materials (specified by material)	N/A
Type of energy vector. For example, electricity, natural gas, district heating	N/A
Equipment output power	N/A
Net freshwater consumption	N/A
Characteristic features (energy efficiency, emissions, etc.)	N/A
Other scenario development assumptions. For example, transportation	N/A

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	kg for final disposal
	0.552	0.4968	0.0552
Assumptions for scenario development	Metals: 90% recycling; 10% landfill.		

5. ADDITIONAL INFORMATION

6. PCR 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:

14/02/2024

References

PRODUCT LIFE CYCLE ANALYSIS: TD, TX and TK Series Cylinders
By: ECOPENTA SL. November 2023 (v1) (unpublished)

Programme Manager

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

A continuación, se presentan los resultados del Análisis de Ciclo de Vida de las otras dos series de cilindros (TD y TK).

Referencia de producto: TD6356100LAM TES 2030/60X100 LT TD60 3LL.AM

Parámetro	Unidad	Etapa del ciclo de vida																Módulo D
		Fabricación			Construcción		Uso							Fin de vida				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Cambio climático - total (GWP-total)	kg CO_2 eq	3,89E+00	4,54E-03	4,53E-02	6,53E-02	1,04E-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	4,20E-03	1,14E-02	2,72E-04	-3,97E-01
Cambio climático - fósil (GWP-fossil)	kg CO_2 eq	3,84E+00	4,54E-03	4,49E-02	6,52E-02	7,29E-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	4,19E-03	1,16E-02	2,71E-04	-4,00E-01
Cambio climático - biogénico (GWP-biogenic)	kg CO_2 eq	4,15E-02	3,92E-06	6,93E-05	5,37E-05	2,89E-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	3,62E-06	-2,04E-04	2,69E-07	3,52E-03
Cambio climático - uso del suelo y cambios del uso del suelo (GWP-luluc)	kg CO_2 eq	8,82E-03	1,81E-06	2,75E-04	2,70E-05	2,75E-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	1,68E-06	2,21E-05	2,56E-07	5,20E-05
Agotamiento de la capa de ozono (ODP)	kg CFC 11 eq	2,36E-07	1,05E-09	4,52E-09	1,50E-08	1,25E-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	9,72E-10	1,54E-09	1,10E-10	-1,35E-08
Acidificación (AP)	mol H^+ eq	2,32E-01	1,29E-05	3,37E-04	2,63E-04	1,19E-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	1,19E-05	1,38E-04	2,55E-06	-1,20E-03
Eutrofización del agua dulce (EP-freshwater)	kg P eq	1,03E-03	3,23E-08	1,87E-06	4,56E-07	9,37E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,99E-08	5,63E-07	2,84E-09	-1,67E-05
Eutrofización del agua marina (EP-marine)	kg N eq.	1,19E-02	2,56E-06	5,27E-05	5,64E-05	2,58E-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	2,37E-06	3,04E-05	8,82E-07	-2,89E-04
Eutrofización terrestre (EP-terrestrial)	mol N eq.	1,67E-01	2,85E-05	5,54E-04	6,28E-04	5,31E-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	2,64E-05	3,50E-04	9,71E-06	-3,40E-03
Formación ozono fotoquímico (POCP)	kg NMVOC eq	4,64E-02	1,10E-05	1,76E-04	2,12E-04	2,17E-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	1,01E-05	9,66E-05	2,82E-06	-2,21E-03
Agotamiento de los recursos abióticos - minerales y metales (ADP-minerals&metals)	kg Sb eq	5,77E-03	1,61E-08	4,48E-07	2,26E-07	2,89E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,49E-08	1,37E-06	6,19E-10	8,55E-07
Agotamiento de recursos abióticos - combustibles fósiles (ADP-fossil)	MJ, valor calorífico neto	4,91E+01	6,88E-02	9,90E-01	9,83E-01	9,46E-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	6,36E-02	1,60E-01	7,58E-03	-3,16E+00
Consumo de agua (WDP)	m^3 mundial eq. privada	5,25E+00	2,09E-04	3,28E-02	2,95E-03	1,66E-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	1,94E-04	2,11E-03	3,41E-04	-3,05E-02

Parámetro	Unidad	Etapa del ciclo de vida																Módulo D
		Fabricación			Construcción		Uso							Fin de vida				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Potencial de Calentamiento Global (GHG)	kg CO2 eq	3,79E+00	4,50E-03	4,46E-02	6,48E-02	9,18E-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	4,16E-03	1,15E-02	2,66E-04	-3,77E-01

Parámetro	Unidad	Etapa del ciclo de vida																Módulo D
		Fabricación			Construcción		Uso							Fin de vida				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Uso de energía primaria renovable excluyendo los recursos de energía primaria renovable utilizada como materia prima	MJ, valor calorífico neto	1,45E+01	9,83E-04	2,10E-01	1,38E-02	8,32E-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	9,09E-04	2,49E-02	6,46E-05	1,63E-01
Uso de energía primaria renovable utilizada como materia prima	MJ, valor calorífico neto	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
Uso total de energía primaria renovable (energía primaria y recursos de energía primaria renovable utilizada como materia prima)	MJ, valor calorífico neto	1,45E+01	9,83E-04	2,10E-01	1,38E-02	8,32E-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	9,09E-04	2,49E-02	6,46E-05	1,63E-01
Uso de energía primaria no renovable, excluyendo los recursos de energía primaria no renovable utilizada como materia prima	MJ, valor calorífico neto	5,23E+01	7,30E-02	1,03E+00	1,04E+00	1,01E-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	6,75E-02	1,70E-01	8,05E-03	-3,33E+00
Uso de la energía primaria no renovable utilizada como materia prima	MJ, valor calorífico neto	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
Uso total de la energía primaria no renovable (energía primaria y recursos de energía primaria renovable utilizada como materia prima)	MJ, valor calorífico neto	5,23E+01	7,30E-02	1,03E+00	1,04E+00	1,01E-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	6,75E-02	1,70E-01	8,05E-03	-3,33E+00
Uso de materiales secundarios	kg	1,18E-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Uso de combustibles secundarios renovables	MJ, valor calorífico neto	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
Uso de combustibles secundarios no renovables	MJ, valor calorífico neto	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
Uso neto de recursos de agua dulce	m^3	5,22E+00	2,10E-04	3,38E-02	2,96E-03	1,59E-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	1,95E-04	2,09E-03	3,41E-04	-2,92E-02
Residuos peligrosos eliminados	kg	1,84E-03	1,79E-07	9,07E-07	2,51E-06	3,82E-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	1,66E-07	4,60E-07	1,15E-08	-5,32E-05
Residuos no peligrosos eliminados	kg	1,68E+00	3,60E-03	6,73E-03	4,98E-02	1,65E-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	3,33E-03	4,92E-03	5,15E-02	5,56E-02
Residuos radiactivos eliminados	kg	1,95E-04	4,65E-07	6,75E-06	6,65E-06	4,85E-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	4,30E-07	9,43E-07	4,96E-08	5,94E-06
Componentes para su reutilización	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
Materiales para el reciclaje	kg	0,00E+00	0,00E+00	6,00E-01	0,00E+00	9,33E-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	0,00E+00	4,64E-01	0,00E+00	0,00E+00
Materiales para la valorización energética (recuperación de energía)	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,90E-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Energía exportada	MJ por vector energético	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,03E-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

Referencia de producto: AK6353060N6 TK6 PRO EURO 30X60 R15 K66 NM

Parámetro	Unidad	Etapa del ciclo de vida																Módulo D
		Fabricación			Construcción		Uso							Fin de vida				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Cambio climático - total (GWP-total)	kg CO_2 eq	2,17E+00	4,87E-03	2,51E-02	4,17E-02	2,41E-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	2,32E-03	6,31E-03	1,50E-04	-2,20E-01
Cambio climático - fósil (GWP-fossil)	kg CO_2 eq	2,16E+00	4,86E-03	2,49E-02	4,16E-02	7,34E-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	2,32E-03	6,41E-03	1,50E-04	-2,22E-01
Cambio climático - biogénico (GWP-biogenic)	kg CO_2 eq	7,60E-03	4,20E-06	3,84E-05	3,43E-05	1,57E-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	2,00E-06	-1,13E-04	1,49E-07	1,95E-03
Cambio climático - uso del suelo y cambios del uso del suelo (GWP-luluc)	kg CO_2 eq	5,14E-03	1,95E-06	1,52E-04	1,72E-05	4,43E-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	9,28E-07	1,22E-05	1,42E-07	2,88E-05
Agotamiento de la capa de ozono (ODP)	kg CFC 11 eq	1,36E-07	1,13E-09	2,50E-09	9,58E-09	3,07E-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	5,38E-10	8,51E-10	6,07E-11	-7,50E-09
Acidificación (AP)	mol H^+ eq	1,30E-01	1,38E-05	1,87E-04	1,68E-04	2,32E-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	6,59E-06	7,63E-05	1,41E-06	-6,64E-04
Eutrofización del agua dulce (EP-freshwater)	kg P eq	5,77E-04	3,47E-08	1,03E-06	2,91E-07	1,61E-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	1,65E-08	3,11E-07	1,57E-09	-9,23E-06
Eutrofización del agua marina (EP-marine)	kg N eq.	6,73E-03	2,74E-06	2,92E-05	3,60E-05	1,23E-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	1,31E-06	1,68E-05	4,88E-07	-1,60E-04
Eutrofización terrestre (EP-terrestrial)	mol N eq.	9,38E-02	3,06E-05	3,07E-04	4,01E-04	7,70E-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	1,46E-05	1,94E-04	5,37E-06	-1,88E-03
Formación ozono fotoquímico (POCP)	kg NMVOC eq	2,61E-02	1,18E-05	9,72E-05	1,35E-04	5,99E-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	5,61E-06	5,34E-05	1,56E-06	-1,22E-03
Agotamiento de los recursos abióticos - minerales y metales (ADP-minerals&metals)	kg Sb eq	3,24E-03	1,72E-08	2,48E-07	1,44E-07	6,89E-10	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,23E-09	7,59E-07	3,42E-10	4,73E-07
Agotamiento de recursos abióticos - combustibles fósiles (ADP-fossil)	MJ, valor calorífico neto	2,78E+01	7,37E-02	5,48E-01	6,27E-01	2,49E-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	3,52E-02	8,85E-02	4,19E-03	-1,75E+00
Consumo de agua (WDP)	m^3 mundial eq. privada	3,02E+00	2,24E-04	1,81E-02	1,88E-03	2,50E-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	1,07E-04	1,17E-03	1,89E-04	-1,69E-02

Parámetro	Unidad	Etapa del ciclo de vida																Módulo D
		Fabricación			Construcción		Uso							Fin de vida				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Potencial de Calentamiento Global (GHG)	kg CO2 eq	2,13E+00	4,83E-03	2,47E-02	4,13E-02	1,78E-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	2,30E-03	6,34E-03	1,47E-04	-2,09E-01

Parámetro	Unidad	Etapa del ciclo de vida																Módulo D
		Fabricación			Construcción		Uso							Fin de vida				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Uso de energía primaria renovable excluyendo los recursos de energía primaria renovable utilizada como materia prima	MJ, valor calorífico neto	8,57E+00	1,05E-03	1,16E-01	8,80E-03	3,64E-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	5,03E-04	1,38E-02	3,58E-05	9,04E-02
Uso de energía primaria renovable utilizada como materia prima	MJ, valor calorífico neto	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
Uso total de energía primaria renovable (energía primaria y recursos de energía primaria renovable utilizada como materia prima)	MJ, valor calorífico neto	8,57E+00	1,05E-03	1,16E-01	8,80E-03	3,64E-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	5,03E-04	1,38E-02	3,58E-05	9,04E-02
Uso de energía primaria no renovable, excluyendo los recursos de energía primaria no renovable utilizada como materia prima	MJ, valor calorífico neto	2,96E+01	7,83E-02	5,73E-01	6,65E-01	2,64E-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	3,74E-02	9,38E-02	4,45E-03	-1,84E+00
Uso de la energía primaria no renovable utilizada como materia prima	MJ, valor calorífico neto	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
Uso total de la energía primaria no renovable (energía primaria y recursos de energía primaria renovable utilizada como materia prima)	MJ, valor calorífico neto	2,96E+01	7,83E-02	5,73E-01	6,65E-01	2,64E-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	3,74E-02	9,38E-02	4,45E-03	-1,84E+00
Uso de materiales secundarios	kg	6,56E-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Uso de combustibles secundarios renovables	MJ, valor calorífico neto	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
Uso de combustibles secundarios no renovables	MJ, valor calorífico neto	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
Uso neto de recursos de agua dulce	m^3	3,00E+00	2,26E-04	1,87E-02	1,89E-03	2,36E-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	1,08E-04	1,16E-03	1,89E-04	-1,62E-02
Residuos peligrosos eliminados	kg	9,94E-04	1,93E-07	5,02E-07	1,60E-06	5,59E-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	9,18E-08	2,55E-07	6,34E-09	-2,95E-05
Residuos no peligrosos eliminados	kg	9,23E-01	3,86E-03	3,73E-03	3,18E-02	7,48E-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	1,84E-03	2,72E-03	2,85E-02	3,08E-02
Residuos radiactivos eliminados	kg	1,10E-04	4,98E-07	3,73E-06	4,24E-06	1,65E-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	2,38E-07	5,22E-07	2,75E-08	3,29E-06
Componentes para su reutilización	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
Materiales para el reciclaje	kg	0,00E+00	0,00E+00	6,00E-01	0,00E+00	9,33E-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	0,00E+00	2,57E-01	0,00E+00	0,00E+00
Materiales para la valorización energética (recuperación de energía)	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,90E-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Energía exportada	MJ por vector energético	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,03E-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