



DAPcons[®].100.144

DECLARACIÓN AMBIENTAL DE PRODUCTO
ENVIRONMENTAL PRODUCT DECLARATION

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

A cateb
Arquitectura Técnica
Barcelona





GENERAL INFORMATION

Product

TOP Series Panic Bar

Company



Product description

Panic sliding device with orbital latch. The TOP range has the following features:

- Rim and mortise device with one/two/three locking points.
- Available in a range of finishes.
- Steel latches. The orbital latch is only for the rim bars; it does not apply to the mortise bars.
- Certified up to 200.000 cycles according to EN 1125.
- TOP rim models certified with the N mark for 2.000.000 cycles.
- Door leaf width: 800, 1.000 and 1.200 mm.

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: 09/02/2023 Until: 09/02/2028

The validity of DAPcons®.100.144 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

TOP Series Panic Bar



DAPconstruction[®] Programme Operator

Environmental Product Declarations in the Construction sector
www.csostenible.net



Programme Manager

Colegio de la Arquitectura Tècnica de Barcelona (Cateb)
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Owner of the declaration

Talleres de Escoriaza SAU
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Author of the Life cycle assessment:

ECOPENTA SL
 C/ Tuset 19, 1^º 3^a, 08006 - BARCELONA, España

Declared product

TOP Series Panic Bar

Geographic representation

Europe

Variability between different products

6% (between bar lengths for door leaf widths of 800 mm, 1000 mm and 1200 mm). See appendix.

Declaration number

DAPcons[®].100.144

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

ENVIRONMENTAL PRODUCT DECLARATION

1. DESCRIPTION OF THE PRODUCT AND ITS USE

Panic sliding device with orbital latch. The TOP range has the following features:

- Rim and mortise device with one/two/three locking points.
- Available in a range of finishes.
- Steel latches.
- Certified up to 200,000 cycles according to EN1125.
- TOP rim models certified with the N mark for 2,000,000 cycles.
- Door leaf width: 800, 1000 and 1200 mm.
- The orbital latch is only for the rim bars; it does not apply to the mortise bars.

The LCA and this environmental impact statement associated with the TOP series panic bar have been performed on the basis of the worst-case study in terms of number of components and weight of all the products in the range. Specifically, the TOP3S808GG BAR product manufactured in Eskoriatza has been analyzed (length for door leaf width of 800 mm). This is a rim device although this EPD is also representative of TOP mortise bars as it is the worst case (it has more components and is heavier).

The product does not contain substances on the REACH list of hazardous substances.

The product's composition is as follows:

	Weight (g)	%
STEEL	3,516	55,14
ALUMINUM	1,685	26,43
ZAMAK	1,156	18,14
POLYETHYLENE	0,0057	0,09
POLYAMIDE 6	0,013	0,21
TOTAL	6,378	100

The packaging has the following composition:

	Kg	%
PVC plastic	0,003	0,49%
Paper	0,030	4,89%
Cardboard	0,245	39,90%
Wood (pallet)	0,336	54,72%
TOTAL	0,614	100,00%

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 TOP SERIES PANIC BAR product is mainly made of zinc-plated steel components.

Module A2 includes the transport of raw materials and packaging to the TESA factory in Ezkoria (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 - MACHINING
- PHASE 3 - SURFACE TREATMENT: phosphating, dryer, painting, powder booth, polymerizer drying oven, neutralization, flocculation, decanter, filter press, sludge storage, burner.
- 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 TOP 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	34.4	386
Europe	Truck 16-32 Tn EURO VI	17.4	847
Rest of the world	Truck 16-32 Tn EURO IV, VI, Container ship	48.2	12000

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 panic bar 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 bar packaging (plastic, 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).
- Plastic waste: 42% recycling, 40% energy recovery and 18% landfill (Reference: Plastic Europe 2018).
- 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 bar 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 9.3.0.2, 2022.

Specific data from the manufacturing plant at Ezkoriazta (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:

Panic exit device operated by a horizontal bar for use in escape routes which ensures the function of enabling quick and easy exit from buildings by “use of a push bar of length for door leaf width 800 mm with a net mass of 6,378 kg during the reference service life of 30 years corresponding to a minimum of 200.000 use cycles”.

Additional comments

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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	3,92E+01	9,73E-01	1,03E+01	9,38E-01	9,98E-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	5,20E-02	3,40E-01	3,37E-03	-1,37E+01
Climate change - fossil (GWP-fossil)	kg CO2 eq	3,87E+01	9,73E-01	1,00E+01	9,37E-01	3,35E-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	5,19E-02	1,62E-01	3,36E-03	-1,35E+01
Climate change - biogenic (GWP-biogenic)	kg CO2 eq	3,29E-01	3,29E-04	2,20E-01	4,39E-04	9,05E-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	4,49E-05	1,71E-01	3,33E-06	9,40E-03
Climate change - land use and changes in land use (GWP-luluc)	kg CO2 eq	1,83E-01	5,58E-04	3,05E-02	4,98E-04	2,00E-07	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-05	1,17E-04	3,17E-06	-1,93E-01
Ozone layer depletion (ODP)	kg CFC 11 eq	2,09E-06	2,09E-07	2,14E-06	2,05E-07	1,59E-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	1,20E-08	1,71E-08	1,36E-09	-8,04E-07
Acidification (AP)	mol H+ eq	2,81E-01	1,89E-02	5,00E-02	1,43E-02	9,11E-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	1,48E-04	8,13E-04	3,16E-05	-8,71E-02
Eutrophication of fresh water (EP-freshwater)	kg P eq	2,22E-02	4,65E-05	2,51E-03	4,90E-05	8,14E-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	3,40E-06	4,73E-05	3,08E-07	-5,13E-03
Eutrophication of sea water (EP-marine)	kg N eq.	4,99E-02	4,82E-03	1,00E-02	3,58E-03	8,02E-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	3,00E-05	3,61E-04	1,10E-05	-1,28E-02
Terrestrial eutrophication (EP-terrestrial)	mol N eq.	4,97E-01	5,35E-02	8,64E-02	3,97E-02	2,27E-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	3,27E-04	2,51E-03	1,20E-04	-1,34E-01
Photochemical ozone formation (POCP)	kg NMVOC eq	1,56E-01	1,41E-02	2,76E-02	1,06E-02	2,82E-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	1,26E-04	7,10E-04	3,50E-05	-5,54E-02
Depletion of abiotic resources - minerals and metals (ADP-minerals&metals)	kg Sb eq	3,51E-03	2,31E-06	9,59E-05	2,50E-06	3,48E-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	1,84E-07	3,59E-06	7,66E-09	-1,01E-05
Depletion of abiotic resources - fossil fuels (ADP-fossil)	MJ, net calorific value	4,51E+02	1,35E+01	1,84E+02	1,33E+01	1,23E-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	7,88E-01	1,62E+00	9,38E-02	-1,22E+02
Water consumption (WDP)	m3 worldwide eq. private	1,42E+01	3,22E-02	5,39E+00	3,41E-02	8,87E-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	2,40E-03	1,93E-02	4,22E-03	-2,73E+00
The Indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This Indicator is thus equal to the GWP Indicator originally defined in EN 15804:2012+A1:2013. Can be obtained from IPCC characterization factors.																		
Global Warming Potential (GHG)	kg CO2 eq	3,82E+01	9,66E-01	9,87E+00	9,31E-01	6,25E-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	5,16E-02	2,27E-01	3,30E-03	-1,32E+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	7,88E+01	1,43E-01	2,55E+01	1,54E-01	2,08E-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	1,13E-02	1,46E-01	8,01E-04	-6,63E+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	7,88E+01	1,43E-01	2,55E+01	1,54E-01	2,08E-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	1,13E-02	1,46E-01	8,01E-04	-6,63E+01
Non-renewable primary energy use, excluding non-renewable primary energy resources used as feedstock	MJ, net calorific value	4,79E+02	1,44E+01	1,97E+02	1,42E+01	1,30E-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	8,36E-01	1,72E+00	9,97E-02	-1,29E+02
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	4,79E+02	1,44E+01	1,97E+02	1,42E+01	1,30E-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	8,36E-01	1,72E+00	9,97E-02	-1,29E+02
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	1,40E+01	3,27E-02	5,37E+00	3,45E-02	8,28E-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	2,41E-03	1,92E-02	4,23E-03	-2,72E+00
Hazardous waste removed	kg	1,95E-02	2,43E-05	2,27E-04	2,68E-05	1,67E-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	2,06E-06	4,26E-06	1,42E-07	-5,82E-04
Non-hazardous waste eliminated	kg	1,37E+01	3,75E-01	3,11E+00	4,56E-01	4,26E-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	4,13E-02	1,58E-01	6,38E-01	-3,01E+00
Radioactive waste disposed of	kg	1,47E-03	9,28E-05	8,02E-04	9,10E-05	8,90E-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	5,32E-06	1,02E-05	6,15E-07	-3,57E-04
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	6,38*0,9	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	0,131
Contenido Carbono (biogénico) - producto	0,0

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: TOP Series Panic Bar.

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 panic bar is EN 1125 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/m ³
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)	30 g Paper 245 g Cardboard 3 g PVC 336 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)	<ul style="list-style-type: none"> • Paper and cardboard waste: 85% recycling, 15% landfill (PEF, 2021). • Plastic waste 42% recycling, 40% energy rec. and 18% landfill. (Reference: Plastic Europe 2018). • 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	TOP series panic bar

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

Parameter	Parameter expressed per functional unit
Energy input during the repair, renovation, replacement process if applicable and relevant (quantity and type of energy vector)	None
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
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
	6.38	0	5.74	0	0.638
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:

09/02/2023

References

PRODUCT LIFE CYCLE ANALYSIS:
 - TOP SERIES PANIC BAR (TOP3S808GG).

Programme Manager

Colegio de la Arquitectura Técnica de Barcelona
(Cateb)

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The results of the Life Cycle Analysis of the other two types of TOP Bar are presented below:

- TOP Bar 1000mm
- TOP Bar 1200mm

Weight ratio:

Bar 800	Bar 1000	Bar 1200
6,38 kg	6,76 kg	7,05 kg

TOP Bar 1000mm

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	4,52E+01	1,03E+00	1,14E+01	9,85E-01	1,05E-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	5,49E-02	3,95E-01	3,55E-03	-1,51E+01
Global warming fossil fuels (GWP-fossil)	kg CO ₂ eq	4,46E+01	1,03E+00	1,11E+01	9,84E-01	3,53E-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	5,48E-02	1,88E-01	3,54E-03	-1,48E+01
Global warming - biogenic (GWP-biogenic)	kg CO ₂ eq	4,09E-01	3,54E-04	2,44E-01	4,61E-04	9,54E-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	4,73E-05	1,99E-01	3,51E-06	1,03E-02
Global warming land use and land use change (GWP-luluc)	kg CO ₂ eq	2,37E-01	5,91E-04	3,37E-02	5,22E-04	2,11E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,19E-05	1,35E-04	3,35E-06	-2,12E-01
Ozone layer depletion (ODP)	kg CFC 11 eq	2,38E-06	2,21E-07	2,37E-06	2,15E-07	1,68E-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	1,27E-08	1,99E-08	1,43E-09	-8,85E-07
Acidification (AP)	mol H ⁺ eq	2,92E-01	1,99E-02	5,54E-02	1,50E-02	9,61E-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	1,56E-04	9,43E-04	3,33E-05	-9,58E-02
Eutrophication - freshwater (EP-freshwater)	kg PO ₄ eq	9,04E-02	1,96E-03	1,36E-02	1,51E-03	1,26E-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	2,68E-05	7,63E-04	5,39E-06	-2,35E-02
Eutrophication - freshwater (EP-freshwater)	kg P eq	2,18E-02	4,95E-05	2,78E-03	5,14E-05	8,58E-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	3,59E-06	5,49E-05	3,24E-07	-5,64E-03
Eutrophication - marine (EP-marine)	kg N eq	5,43E-02	5,08E-03	1,11E-02	3,76E-03	8,45E-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-05	4,19E-04	1,16E-05	-1,41E-02
Eutrophication - terrestrial (EP-terrestrial)	mol N eq	5,47E-01	5,63E-02	9,57E-02	4,16E-02	2,39E-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	3,45E-04	2,91E-03	1,27E-04	-1,47E-01
Tropospheric Ozone Formation (POCP)	kg NMVOC eq	1,70E-01	1,48E-02	3,05E-02	1,12E-02	2,97E-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	1,33E-04	8,24E-04	3,69E-05	-6,10E-02
Abiotic depletion for non-fossil resources (ADP-minerals&metals)	kg Sb eq	3,52E-03	2,46E-06	1,06E-04	2,62E-06	3,67E-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	1,94E-07	4,16E-06	8,08E-09	-1,11E-05
Abiotic depletion for fossil resources (ADP-fossil)	MJ, net calorific value	5,04E+02	1,44E+01	2,04E+02	1,40E+01	1,30E-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	8,31E-01	1,88E+00	9,90E-02	-1,34E+02
Water user deprivation (WDP)	m ³	1,53E+01	3,43E-02	5,97E+00	3,58E-02	9,35E-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	2,53E-03	2,24E-02	4,46E-03	-3,01E+00

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	3,40E-06	5,95E-08	2,57E-07	6,18E-08	9,25E-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	4,42E-09	1,64E-08	6,71E-10	-1,38E-06
Ionizing radiation, human health (IRP)	kBq U235 eq	3,94E+00	6,96E-02	3,07E+00	6,89E-02	1,76E-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	4,28E-03	2,03E-02	4,40E-04	-7,86E-01
Eco-toxicity (freshwater) (ETP-fw)	CTUe	2,41E+03	1,01E+01	2,50E+02	1,01E+01	2,20E-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	6,52E-01	1,66E+01	6,25E-02	-4,41E+02
Human toxicity, cancer effects (HTP-c)	CTUh	2,29E-07	5,15E-10	8,61E-09	4,64E-10	1,81E-12	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,10E-11	2,94E-10	1,59E-12	3,27E-08
Human toxicity, non-cancer effects (HTP-nc)	CTUh	2,05E-06	8,78E-09	1,88E-07	9,19E-09	1,59E-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	6,59E-10	4,99E-09	4,11E-11	-5,18E-07
Land use related impacts / Soil quality (SQP)	dimensionless	1,62E+02	6,05E+00	2,84E+01	6,89E+00	2,69E-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	5,79E-01	5,62E+00	2,08E-01	-2,20E+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	
Global Warming Potential - GHG	kg CO ₂ eq	4,38E+01	1,02E+00	1,09E+01	9,77E-01	6,60E-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	5,44E-02	2,63E-01	3,48E-03	-1,45E+01

TOP Bar 1200mm

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	5,05E+01	1,08E+00	1,25E+01	1,03E+00	1,10E-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	5,75E-02	4,14E-01	3,72E-03	-1,51E+01
Global warming fossil fuels (GWP-fossil)	kg CO ₂ eq	4,97E+01	1,08E+00	1,22E+01	1,03E+00	3,70E-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	5,74E-02	1,97E-01	3,71E-03	-1,48E+01
Global warming - biogenic (GWP-biogenic)	kg CO ₂ eq	4,19E-01	3,72E-04	2,68E-01	4,83E-04	1,00E-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	4,96E-05	2,08E-01	3,68E-06	1,03E-02
Global warming land use and land use change (GWP-land)	kg CO ₂ eq	2,75E-01	6,18E-04	3,70E-02	5,47E-04	2,21E-07	0,00E+00	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-05	1,42E-04	3,51E-06	-2,12E-01
Ozone layer depletion (ODP)	kg CFC 11 eq	2,63E-06	2,32E-07	2,60E-06	2,25E-07	1,76E-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	0,00E+00	1,33E-08	2,08E-08	1,50E-09	-8,85E-07
Acidification (AP)	mol H ⁺ eq	3,27E-01	2,08E-02	6,08E-02	1,57E-02	1,01E-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	0,00E+00	1,63E-04	9,88E-04	3,49E-05	-9,58E-02
Eutrophication - freshwater (EP-freshwater)	kg PO ₄ eq	9,83E-02	2,04E-03	1,49E-02	1,59E-03	1,32E-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	2,81E-05	8,00E-04	5,65E-06	-2,35E-02
Eutrophication - freshwater (EP-freshwater)	kg P eq	2,37E-02	5,19E-05	3,05E-03	5,39E-05	8,99E-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	0,00E+00	3,76E-06	5,75E-05	3,40E-07	-5,64E-03
Eutrophication - marine (EP-marine)	kg N eq	5,97E-02	5,30E-03	1,22E-02	3,94E-03	8,86E-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	0,00E+00	3,31E-05	4,39E-04	1,21E-05	-1,41E-02
Eutrophication - terrestrial (EP-terrestrial)	mol N eq	6,02E-01	5,88E-02	1,05E-01	4,36E-02	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	0,00E+00	3,61E-04	3,05E-03	1,33E-04	-1,47E-01
Tropospheric Ozone Formation (POCP)	kg NMVOC eq	1,87E-01	1,55E-02	3,35E-02	1,17E-02	3,11E-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	0,00E+00	1,39E-04	8,63E-04	3,87E-05	-6,10E-02
Abiotic depletion for non-fossil resources (ADP-minerals&metals)	kg Sb eq	3,53E-03	2,58E-06	1,17E-04	2,75E-06	3,85E-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	0,00E+00	2,04E-07	4,36E-06	8,47E-09	-1,11E-05
Abiotic depletion for fossil resources (ADP-fossil)	MJ, net calorific value	5,59E+02	1,51E+01	2,24E+02	1,47E+01	1,36E-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	8,70E-01	1,97E+00	1,04E-01	-1,34E+02
Water user deprivation (WDP)	m ³	1,61E+01	3,59E-02	6,55E+00	3,75E-02	9,80E-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	0,00E+00	2,65E-03	2,35E-02	4,67E-03	-3,01E+00

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	3,81E-06	6,23E-08	2,82E-07	6,47E-08	9,69E-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	0,00E+00	4,63E-09	1,72E-08	7,03E-10	-1,38E-06
Ionizing radiation, human health (IRP)	kBq U235 eq	4,25E+00	7,29E-02	3,37E+00	7,22E-02	1,84E-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	4,48E-03	2,12E-02	4,61E-04	-7,86E-01
Eco-toxicity (freshwater) (ETP-fw)	CTUe	2,55E+03	1,05E+01	2,74E+02	1,06E+01	2,31E-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	6,83E-01	1,74E+01	6,55E-02	-4,41E+02
Human toxicity, cancer effects (HTP-c)	CTUh	2,37E-07	5,39E-10	9,45E-09	4,86E-10	1,89E-12	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,20E-11	3,08E-10	1,66E-12	3,27E-08
Human toxicity, non-cancer effects (HTP-nc)	CTUh	2,19E-06	9,21E-09	2,06E-07	9,63E-09	1,67E-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	0,00E+00	6,90E-10	5,23E-09	4,31E-11	-5,18E-07
Land use related impacts / Soil quality (SQP)	dimensionless	1,72E+02	6,35E+00	3,12E+01	7,22E+00	2,82E-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	6,07E-01	5,89E+00	2,18E-01	-2,20E+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		
Global Warming Potential - GHG	kg CO ₂ eq	4,89E+01	1,07E+00	1,20E+01	1,02E+00	6,91E-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	5,70E-02	2,75E-01	3,65E-03	-1,45E+01

