

Environmental Product Declaration (EPD)

According to ISO 14025 and EN 15804+A2

Lateral Rolling Modular Flyscreen – BORA



Registration number: EPD-Kiwa-EE-000465-EN
Issue date: 17.11.2025
Valid until: 17.11.2030
Declaration owner: MV Line S.p.A.
Publisher: Kiwa-Ecobility Experts
Program operator: Kiwa-Ecobility Experts
Status: verified



1 General information

1.1 PRODUCT

This declaration is related to lateral rolling modular flyscreen BORA

BORA is the representative product of the BORA family that includes BORA, BORA MINI, BORA TOP, BORA INCAS and BORA TOP INCAS.

Detailed information on each product can be found in the section PRODUCT DESCRIPTION.

1.2 REGISTRATION NUMBER

EPD-Kiwa-EE-000465-EN

1.3 VALIDITY

Issue date: 17-11-2025

Valid until: 17-11-2030

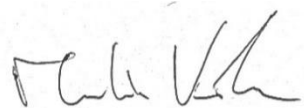
1.4 PROGRAM OPERATOR

Kiwa-Ecobility Experts
Wattstraße 11-13
13355 Berlin
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Raoul Mancke

(Head of program operations, Kiwa-Ecobility Experts)



Martin Köhrer

(Verification body, Kiwa-Ecobility Experts)

1.5 OWNER OF THE DECLARATION

Declaration owner: MV Line S.p.A. MV Line Group

Address: 70021 Acquaviva delle Fonti BA - Zona PIP - Via Umbria, lotto 69, Italy

E-mail: info@mvline.it

Website: www.mvline.it

Production location: Acquaviva delle Fonti

Address production location: 70021 Acquaviva delle Fonti BA - Zona PIP - Via Umbria, lotto 69, Italy

1.6 VERIFICATION OF THE DECLARATION

The independent verification is in accordance with the ISO 14025:2011. The LCA is in compliance with ISO 14040:2006 and ISO 14044:2006. The EN 15804:2012+A2:2019 serves as the core PCR.

Internal External



Lucas Pedro Berman, Senda

(Third party verifier)

1.7 STATEMENTS

The owner of this EPD shall be liable for the underlying information and evidence. The program operator Kiwa-Ecobility Experts shall not be liable with respect to manufacturer data, life cycle assessment data and evidence.

1.8 PRODUCT CATEGORY RULES

Kiwa-EE GPI R.3.0

Kiwa-Ecobility Experts, General Programme Instructions “Product Level”, Program EE 1201 (27.02.2025)

Kiwa-EE GPI R.3.0 Annex B1

Kiwa-Ecobility Experts, General Programme Instructions “Product Level” – Annex B1 Environmental Information Programme according to EN 15804 / ISO 21930, Program EE 1203 (27.02.2025)]

1.9 COMPARABILITY

In principle, a comparison or assessment of the environmental impacts of different products is only possible if they have been prepared in accordance with EN 15804. For the evaluation of the comparability, the following aspects have to be considered in particular: PCR used, functional or declared unit, geographical reference, the definition of the system boundary, declared modules, data selection (primary or secondary data, background database, data quality), scenarios used for use and disposal phases, and the life cycle inventory (data collection, calculation methods, allocations, validity period). PCRs and general program instructions of different EPDs programs may differ. Comparability needs to be evaluated. For further guidance, see EN 15804+A2 (5.3 Comparability of EPD for construction products) and ISO 14025 (6.7.2 Requirements for comparability).

1.10 CALCULATION BASIS

LCA method: EN15804+A2

LCA software: Sphera - LCA for Experts - version 10.9.0.31, scheme 8007 (Sphera Solutions GmbH)

Characterization method: EN 15804 +A2 Method v1.0

LCA database profiles: Sphera database

Version database: version 10.9.0.31

1.11 PROJECT REPORT

This EPD is generated on the basis of the following report: MVLine_study report_EPД_BORA

1.12 OTHER INFORMATION

CPC CODE: 42120 Doors, windows and their frames and thresholds for doors, of iron, steel or aluminium.

C.A.M.* (MINIMUM ENVIRONMENTAL CRITERIA) IN CONSTRUCTION AND SUSTAINABILITY PROTOCOLS

The amount of recycled material contained in the aluminium profile, in the percentages reported in the following pages, make the products covered by this certification compliant with the parameters required by the ITALIAN DECREE of 23 June 2022 "Minimum Environmental Criteria for the entrusting of design services for building interventions, for the entrusting of works for building interventions and for the joint entrusting of design and works for building interventions". Furthermore, this certification is valid for the fulfilment of the requirements of the main sustainability protocols (LEED, BREEAM, WELL). It should be noted that the Declaration does not apply to all the other components required to make the window frame, such as glass, gaskets and hardware.

*Criteri Ambientali Minimi

RECYCLED

Regarding the use of recycled materials, the organization also sources from one supplier who declares a certain percentage of recycled content in raw material.

Supplier: MV Extrusion S.p.a.

The percentage of primary - secondary aluminium is shown in the table below:

RECYCLED MATERIAL IN THE EXTRUDED PROFILE	
Pre-consumer recycled aluminium (% of total Al)	24.7%*
Post-consumer recycled aluminium (% of total Al)	15.6%
Primary aluminium (% of total Al)	59.7%

*Pre-consumer content of recycled aluminium (24.7%) comes from:

- 18.9% Internal scraps
- 5.8% scraps received from outside

2 Product

2.1 PRODUCT DESCRIPTION

Lateral rolling modular flyscreen: BORA

BORA is the representative product of the BORA family that includes BORA MINI, BORA TOP, BORA INCAS and BORA TOP INCAS.

BORA

Side mosquito net with 1.8 mm lower guide. Patented windproof system with a pocket and rod at the bottom of the mesh prevents it from slipping. Can be stopped at any point. Magnetic closure. Fiberglass mesh available in gray, BlackLine, or antibacterial Sunox.

BORA TOP

Side mosquito net with 1.8 mm lower guide. The patented windproof system includes pockets and rods at both the top and bottom of the mesh, preventing it from slipping. Can be stopped at any point. Magnetic closure. Fiberglass mesh available in gray, BlackLine, or antibacterial Sunox.

BORA INCAS

Built-in version integrated into the wall junction. 1.8 mm lower guide. Patented windproof system with a pocket and rod at the bottom of the mesh prevents it from slipping. Magnetic closure. Compatible with standard Bora mesh panels and components.

BORA TOP INCAS

Built-in version with 1.8 mm lower guide. The patented windproof system includes pockets and rods on both the upper and lower parts of the mesh, preventing it from slipping. Magnetic closure. Compatible with Bora Top mesh and components.

BORA MINI

Small-size version with 1.8 mm lower guide. The patented windproof system includes pockets and rods on both the upper and lower parts of the mesh, preventing it from slipping. Can be stopped at any point. Magnetic closure. Fiberglass mesh available in gray or BlackLine.

Differences:

- Bora – Bora Incas: bag and rod on the lower part only.
- Bora Top – Bora Top Incas: bag and rod on the upper and lower parts.
- Bora Mini: Smaller than the others. Bag and rod on the upper and lower parts.

Product specification

The composition of the product is described in the following table:

Materials	Average Weight [m-%]
Steel	2.85%
Fiberglass	4.75%
Aluminium	74.95%
Brass	0.04%
Polyamide	2.40%
Polyoxymethylene	7.05%
Polypropylene	0.80%
Polyvinylchloride	7.03%
Zinc	0.10%

2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

The primary application of a solar screen, more specifically a mosquito net like BORA, is to protect indoor spaces from mosquitoes and insects, offering a practical solution with a product that allows the passage of light and air.

2.3 REFERENCE SERVICE LIFE (RSL)

RSL PRODUCT

The reference service life for lateral rolling modular flyscreen is considered of 50 years based on efficiency levels and usage class.

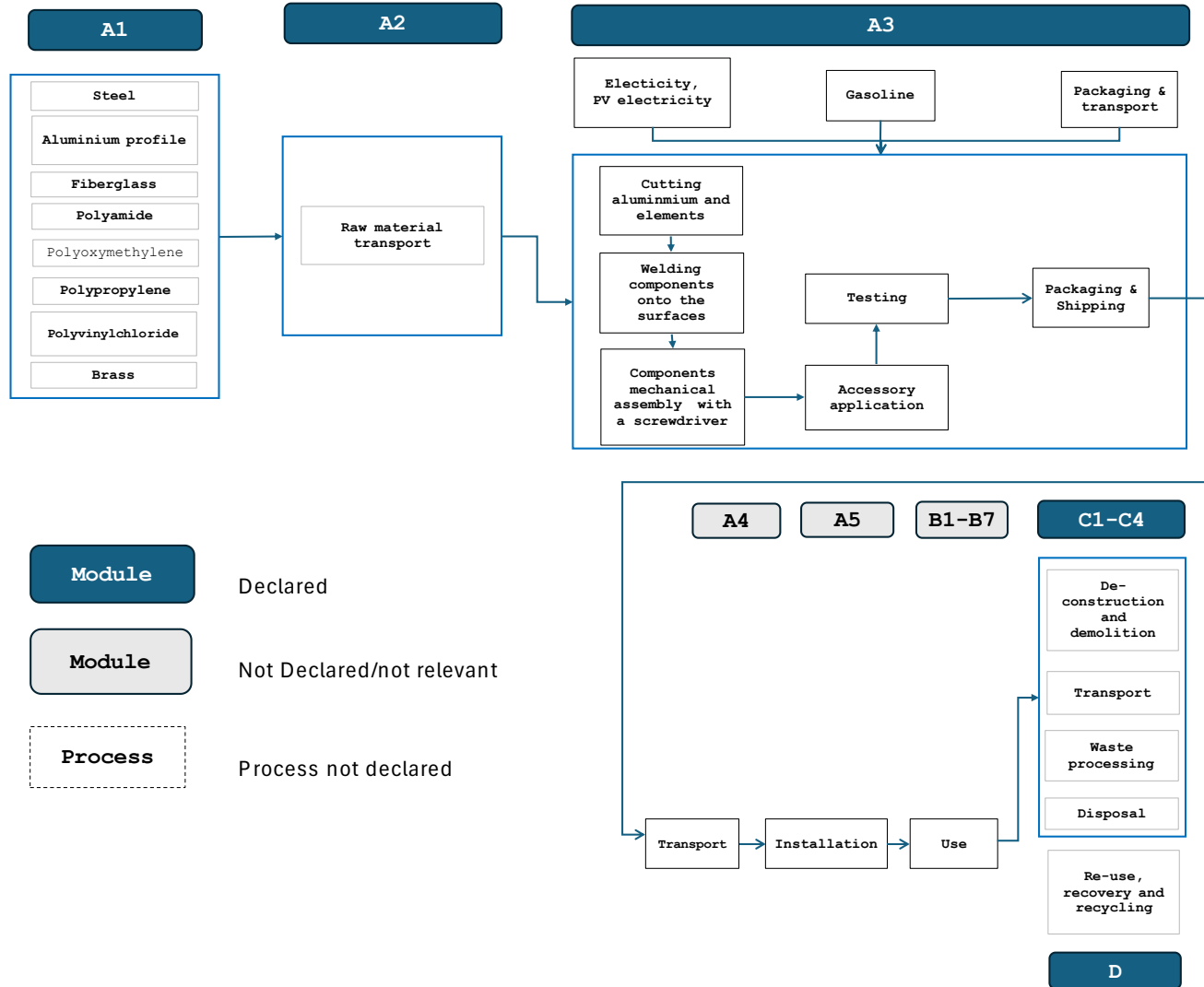
USED RSL (YR) IN THIS CALCULATION

50 years

2.4 SUBSTANCES OF VERY HIGH CONCERN

Lateral rolling modular flyscreen BORA does not contain SVHC.

2.5 DESCRIPTION PRODUCTION PROCESS



3 Calculation rules

3.1 DECLARED UNIT

1 square meter of lateral rolling modular flyscreen BORA with weight of 3.24 kg.

3.2 CONVERSION FACTORS

Description	Value	Unit
Reference unit	1	Square meter
Weight per reference unit	3.24	kg

3.3 SCOPE OF DECLARATION AND SYSTEM BOUNDARIES

Cradle to gate with module C1-C4 and module D

The life cycle stages included are as shown below:

(X = module declared, ND = module not declared)

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

The modules of the EN15804+A2 contain the following:

Module A1 = Raw material supply	Module B5 = Refurbishment
Module A2 = Transport	Module B6 = Operational energy use
Module A3 = Manufacturing	Module B7 = Operational water use
Module A4 = Transport	Module C1 = De-construction / Demolition
Module A5 = Construction - Installation process	Module C2 = Transport

Module B1 = Use

Module C3 = Waste Processing

Module B2 = Maintenance

Module C4 = Disposal

Module B3 = Repair

Module D = Benefits and loads beyond the product system boundaries

Module B4 = Replacement

3.4 REPRESENTATIVENESS

This EPD is representative for lateral rolling modular flyscreen, BORA a product of MV Line S.p.A.

Environmental impacts were calculated with reference to the production site. The reference market and end-of-life scenario consider the European context. Further references to countries or regions representative of the processes are given in the section on modelling with the software.

3.5 CUT-OFF CRITERIA

The cut-off not applied.

3.6 ALLOCATION

A mass allocation was carried out in order to allocate energy and material inputs and outputs to the different products produced in the plant. Allocation factor was calculated on the basis of the production history of the individual product compared to the total number of products produced in 2024. The quantities allocated according to this assumption concern wastes, gasoline and transport of wastes.

3.7 DATA COLLECTION & REFERENCE TIME PERIOD

Primary data including all raw materials, energy consumption and ancillary materials was comprehensively collected for the reference year from 2024-01-01 to 2024-12-31.

3.8 ESTIMATES AND ASSUMPTIONS

The processes relating to polyamide from recycled material and polyoxymethylene from recycled material have been assimilated to the production processes of standard polyamide and polyoxymethylene due to the lack of representative processes within the database.

3.9 DATA QUALITY

Regarding raw materials quantities, specific data taken from the suppliers' bills of lading and from the company's internal management system were used.

Regarding electrical power, the data from electric meter inside the plant and electrical panel of the machinery in the production lines were used.

Data used for raw materials responds to geographical representativeness: Italian data was used within the database or, in nonexistence case of such Europeans, global data only in a few cases.

All data used are compliant with requirements of coverage, accuracy, completeness, representativeness, consistency and reproducibility, and sources and uncertainties have been included for each data item.

All data refer to the financial year 2024, thus not older than 5 years as required by the PCR.

Regarding the raw material production, over which the organization has no influence, secondary data from the Sphera database were used, trying to identify the most representative process flow.

Quality requirement	Specific requirement	Data quality level	Notes
Time-related coverage	Age of data and minimum time period for data collection.	Very Good	All data refer to the financial year 2024, thus not older than 5 years
Geographical coverage	Upstream: Unit process for raw material should be collected for respective geographic region	Good	Regarding raw materials quantities, specific data taken from the suppliers' Bills of Lading and from the company's internal management system were used.
	Core: Unit process for production should represent the real site.	Good	Regarding electrical power, were used data taken from the meter inside the plant and

			the plate data of the machinery present on the production lines.
	Downstream: End-of-life disposal should represent the region of disposal.	Good	-
Technical representativeness	Qualitative assessment of the degree to which the data set reflects the true population of interest (technology)	Good	-

3.10 POWER MIX

The electrical power energy used at the Acquaviva delle Fonti production plant is taken from the grid, the power supply is medium voltage and there is a MV/LV transformation cabin.

Within the production site, and specifically on the roof of the production shed, there is a photovoltaic plant whose energy is partly consumed within the site to operate the production machinery.

The electricity modelling is based on the market-based approach. No guarantee of origin (GO) is available from trader then residual Italian mix it's been applied.

The GWP value of the electrical energy used is 0,441 kg CO₂ per kWh (AIB report 2024).

4 Scenarios and additional technical information

4.1 RAW MATERIAL SUPPLY (A1)

This module concerns the supply of raw material.

4.2 TRANSPORT (A2)

The module covers the transport phase of the raw materials supplied:

4.3 MANUFACTURING (A3)

The module concerns energy, gasoline, waste produced and their transport.

4.4 DE-CONSTRUCTION, DEMOLITION (C1)

The scenario regards the demolition/demontage.

4.5 TRANSPORT END-OF-LIFE (C2)

This module concerns the end-of-life transport phase (the default value assumed is equal to 50 km):

- waste transport

4.6 END OF LIFE (C3, C4)

This module concerns the stage at which the waste is processed:

- waste recycled (aluminium and plastic)
- waste sent to landfill (others components)

4.7 BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY (D)

The module covers the phase of reuse of production waste, scrap and returns:

- scrap, waste and returns
- energy

5 Results

For the impact assessment, the characterization factors of the LCIA method EN 15804 +A2 Method v1.0 are used. Long-term emissions (>100 years) are not considered in the impact assessment. The results of the impact assessment are only relative statements that do not make any statements about endpoints of the impact categories, exceedance of threshold values, safety margins or risks. The following tables show the results of the indicators of the impact assessment, of the use of resources as well as of waste and other output flows.

5.1 ENVIRONMENTAL IMPACT INDICATORS PER 1 m² OF LATERAL ROLLING MODULAR FLYSCREEN WITH WEIGHT OF 3,24 kg

CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbreviation	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.05E+01	3.88E-03	1.19E-01	2.06E+01	4.85E-02	1.26E-02	8.91E-03	1.15E-01	-7.95E+00
GWP-f	kg CO ₂ eq.	2.06E+01	3.85E-03	1.02E-01	2.07E+01	4.85E-02	1.25E-02	8.96E-03	9.74E-02	-7.96E+00
GWP-b	kg CO ₂ eq.	9.10E-02	3.31E-05	1.65E-02	1.07E-01	3.34E-04	1.07E-04	1.70E-04	1.81E-02	7.52E-03
GWP-luluc	kg CO ₂ eq.	4.08E-03	6.51E-05	2.31E-05	4.17E-03	2.91E-04	2.11E-04	1.21E-04	3.98E-04	-1.78E-03
ODP	kg CFC 11 eq.	2.45E-11	3.90E-16	1.23E-11	3.67E-11	1.31E-13	1.27E-15	1.62E-14	9.18E-10	-2.72E-11
AP	mol H+ eq.	9.99E-02	2.31E-05	2.01E-04	1.00E-01	3.44E-04	7.49E-05	4.48E-05	5.29E-04	-3.53E-02
EP-fw	kg P eq.	6.50E-05	1.65E-08	9.29E-07	6.59E-05	1.10E-07	5.36E-08	3.49E-08	1.47E-07	-1.02E-06
EP-m	kg N eq.	1.97E-02	1.13E-05	4.96E-05	1.98E-02	8.87E-05	3.67E-05	2.06E-05	1.88E-04	-6.51E-03
EP-t	mol N eq.	2.16E-01	1.25E-04	5.49E-04	2.17E-01	9.77E-04	4.07E-04	2.28E-04	1.83E-03	-7.09E-02
POCP	kg NMVOC eq.	5.85E-02	2.17E-05	1.56E-04	5.87E-02	2.71E-04	7.03E-05	5.71E-05	3.45E-04	-1.96E-02
ADP-mm	kg Sb eq.	8.50E-06	3.30E-10	3.93E-08	8.54E-06	3.14E-09	1.07E-09	9.40E-09	4.74E-09	-2.41E-07
ADP-f	MJ	2.64E+02	5.06E-02	2.00E+00	2.66E+02	6.40E-01	1.64E-01	1.68E-01	1.23E+00	-7.46E+01
WDP*	m ³	1.31E+01	5.77E-05	4.11E-02	1.32E+01	5.55E-03	1.87E-04	1.71E-03	6.50E-03	-9.82E-01

AP=Acidification (AP) | **GWP-total**=Global warming potential (GWP-total) | **GWP-b**=Global warming potential - Biogenic (GWP-b) | **GWP-f**=Global warming potential - Fossil (GWP-f) | **GWP-luluc**=Global warming potential - Land use and land use change (GWP-luluc) | **EP-m**=Eutrophication marine (EP-m) | **EP-fw**=Eutrophication, freshwater (EP-fw) | **EP-T**=Eutrophication, terrestrial (EP-T) | **ODP**=Ozone depletion (ODP) | **POCP**=Photochemical ozone formation - human health (POCP) | **ADP-f**=Resource use, fossils (ADP-f) | **ADP-mm**=Resource use, minerals and metals (ADP-mm) | **WDP**=Water use (WDP)

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbreviation	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-GHG*	kg CO ₂ eq.	2.06E+01	3.86E-03	1.15E-01	2.07E+01	4.87E-02	1.25E-02	8.99E-03	1.15E-01	-7.96E+00
Particulate matter	Disease incidences	1.83E-06	1.48E-10	1.94E-09	1.83E-06	4.32E-09	4.78E-10	8.82E-10	4.32E-09	-6.08E-07
Ionising radiation, human health	kBq U235 eq.	1.34E+00	9.13E-06	9.40E-03	1.35E+00	7.78E-04	2.96E-05	3.35E-04	7.78E-04	-3.54E-02
Ecotoxicity, freshwater	CTUe	7.22E+01	3.72E-02	1.58E+00	7.38E+01	3.68E-01	1.21E-01	1.17E-01	3.68E-01	-7.24E+01
Human toxicity, cancer	CTUh	2.32E-07	7.48E-13	3.58E-11	2.32E-07	8.71E-12	2.43E-12	2.56E-12	8.71E-12	-2.38E-03
Human toxicity, non-cancer	CTUh	1.76E-07	3.33E-11	7.32E-10	1.76E-07	3.36E-10	1.08E-10	9.36E-11	3.36E-10	-4.30E-08
Land Use	Pt	2.88E+01	2.50E-02	7.95E-01	2.96E+01	1.76E-01	8.12E-02	5.25E-02	1.76E-01	-2.76E+00

ETP-fw=Ecotoxicity, freshwater (ETP-fw) | PM=Particulate Matter (PM) | HTP-c=Human toxicity, cancer (HTP-c) | HTP-nc=Human toxicity, non-cancer (HTP-nc) | IR=Ionising radiation, human health (IR) | SQP=Land use (SQP)

*This indicator takes into account all greenhouse gases, with the exception of the absorption and emission of biogenic carbon dioxide and biogenic carbon stored in the product. Therefore, the indicator is identical to the total GWP, with the exception of the conductivity factor (CF) for biogenic CO₂, which is set to zero.

5.2 INDICATORS DESCRIBING RESOURCE USE AND ENVIRONMENTAL INFORMATION BASED ON LIFE CYCLE INVENTORY (LCI)

PARAMETERS DESCRIBING RESOURCE USE

Abbreviation	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
PERE	MJ	1.28E+02	4.28E-03	3.30E+00	1.31E+02	1.12E-01	1.39E-02	1.79E-02	1.14E-01	-1.17E+01
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.28E+02	4.28E-03	3.30E+00	1.31E+02	1.12E-01	1.39E-02	1.79E-02	1.14E-01	-1.17E+01
PENRE	MJ	2.64E+02	5.06E-02	2.00E+00	2.66E+02	6.40E-01	1.64E-01	1.68E-01	1.23E+00	-7.46E+01
PENRM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	2.64E+02	5.06E-02	2.00E+00	2.66E+02	6.40E-01	1.64E-01	1.68E-01	1.23E+00	-7.46E+01
SM	kg	4.70E-01	0.00E+00	0.00E+00	4.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	4.08E-01	4.80E-06	1.06E-03	4.09E-01	1.70E-04	1.56E-05	4.99E-05	3.01E-04	-2.36E-02

PERE=renewable primary energy ex. raw materials | PERM=renewable primary energy used as raw materials | PERT=renewable primary energy total | PENRE=non-renewable primary energy ex. raw materials | PENRM=non-renewable primary energy used as raw materials | PENRT=non-renewable primary energy total | SM=use of secondary material | RSF=use of renewable secondary fuels | NRSF=use of non-renewable secondary fuels | FW=use of net fresh water

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbreviation	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.75E-07	1.64E-12	1.71E-09	1.77E-07	1.59E-10	5.30E-12	2.43E-11	3.93E-06	-2.59E-08
Non-hazardous waste disposed	kg	8.17E+00	7.87E-06	1.98E-02	8.19E+00	3.24E+00	2.55E-05	4.61E-05	1.27E+00	-1.59E+00
Radioactive waste disposed	kg	1.14E-02	6.54E-08	5.03E-05	1.15E-02	6.72E-06	2.12E-07	2.11E-06	6.77E-06	-3.35E-04

HWD=hazardous waste disposed | **NHWD**=non-hazardous waste disposed | **RWD**=radioactive waste disposed

ENVIRONMENTAL INFORMATION DESCRIBING OUTPUT FLOWS

Abbreviation	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU=Components for re-use | **MFR**=Materials for recycling | **MER**=Materials for energy recovery | **EET**=Exported Energy Thermic | **EEE**=Exported Energy Electric

5.3 INFORMATION ON BIOGENIC CARBON CONTENT PER 1 m² OF LATERAL ROLLING MODULAR FLYSCREEN WITH WEIGHT OF 3,24 kg

The following information describes the biogenic carbon content in (the main parts of) the product at the factory gate per kilogram:

Biogenic carbon content	Amount	Unit
Biogenic carbon content in the product	0	kg C
Biogenic carbon content in accompanying packaging	7.25E-03	kg C

UPTAKE OF BIOGENIC CARBON DIOXIDE

The following amount carbon dioxide uptake is taken into account. Related uptake and release of carbon dioxide in downstream processes are not taken into account in this number although they do appear in the presented results. One kilogram of biogenic carbon content is equivalent to 44/12 kg of biogenic carbon dioxide uptake.

Uptake biogenic carbon dioxide	Amount	Unit
Product	0	kg CO ₂ (biogenic)
Packaging	2.66E-02	kg CO ₂ (biogenic)

6 ADDITIONAL INFORMATION – COMPARISON TABLE BETWEEN BORA FAMILY PRODUCTS

CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbreviation	Unit	BORA REPRESENTATIVE PRODUCT A1 – A3	BORA MINI A1 – A3	BORA INCAS A1 – A3	BORA TOP A1 – A3	BORA TOP INCAS A1 – A3
GWP-total	kg CO ₂ eq.	2.06E+01	1.51E+01	2.27E+01	2.09E+01	2.28E+01
GWP-f	kg CO ₂ eq.	2.07E+01	1.51E+01	2.28E+01	2.10E+01	2.29E+01
GWP-b	kg CO ₂ eq.	1.07E-01	8.29E-02	1.18E-01	1.11E-01	1.17E-01
GWP-luluc	kg CO ₂ eq.	4.17E-03	2.97E-03	4.62E-03	4.21E-03	4.63E-03
ODP	kg CFC 11 eq.	3.67E-11	6.19E-11	5.79E-11	7.14E-11	4.71E-11
AP	mol H+ eq.	1.00E-01	7.19E-02	1.10E-01	1.01E-01	1.11E-01
EP-fw	kg P eq.	6.59E-05	7.12E-05	6.81E-05	6.83E-05	6.87E-05
EP-m	kg N eq.	1.98E-02	1.41E-02	2.18E-02	1.99E-02	2.19E-02
EP-t	mol N eq.	2.17E-01	1.55E-01	2.39E-01	2.18E-01	2.40E-01
POCP	kg NMVOC eq.	5.87E-02	4.20E-02	6.47E-02	5.90E-02	6.50E-02
ADP-mm	kg Sb eq.	8.54E-06	3.78E-06	8.73E-06	8.65E-06	1.01E-05
ADP-f	MJ	2.66E+02	2.00E+02	2.92E+02	2.70E+02	2.93E+02
WDP*	m ³	1.32E+01	1.13E+01	1.41E+01	1.34E+01	1.41E+01

AP=Acidification (AP) | **GWP-total**=Global warming potential (GWP-total) | **GWP-b**=Global warming potential - Biogenic (GWP-b) | **GWP-f**=Global warming potential - Fossil (GWP-f) | **GWP-luluc**=Global warming potential - Land use and land use change (GWP-luluc) | **EP-m**=Eutrophication marine (EP-m) | **EP-fw**=Eutrophication, freshwater (EP-fw) | **EP-T**=Eutrophication, terrestrial (EP-T) | **ODP**=Ozone depletion (ODP) | **POCP**=Photochemical ozone formation - human health (POCP) | **ADP-f**=Resource use, fossils (ADP-f) | **ADP-mm**=Resource use, minerals and metals (ADP-mm) | **WDP**=Water use (WDP)

7 Interpretation of results

7.1 CONTRIBUTION ANALYSIS

1 m² OF LATERAL ROLLING MODULAR FLYSCREEN WITH WEIGHT OF 3,24 kg

The largest contribution is from modules A1-A3 (production phase).

A1-A3	C1	C2	C3	C4
99.43%	0.23%	0.06%	0.04%	0.23%

The largest contribution for A1 – A3 phase is due to aluminium profiles, POM, PVC, PA and recycled aluminium.

A1 iron	A1 Recycled aluminium	A1 PA	A1 POM	A1 PP	A1 Aluminium profiles	A1 PVC	A3 Electricity from grid
0.90%	0.62%	1.91%	3.33%	0.18%	89.02%	3.42%	0.40%

7.2 SENSITIVITY ANALYSES

A sensitivity analysis was conducted to assess the effects on the results provided by the model induced by changes in the values of the input variables in order to improve the decision-making process.

Within the lifecycle of the production of flyscreen the greatest impact is related to the use of aluminium profiles. Consequently, the 'sensitive' link in the entire life cycle is the use of recycled aluminium with a major percentage of use. Therefore, a sensitivity analysis was conducted on the increase of percentage of recycled aluminium from 16,5% to 45%.

The following table shows the delta relating to the reduction of environmental impacts as a result of the choice to increase the percentage of recycled aluminium:

Indicator	Unit	Normal Value	Sensitivity Analyses	Δ
GWP-total	kg CO ₂ eq.	1.45E+01	2.06E+01	-30%
GWP-fossil	kg CO ₂ eq.	1.45E+01	2.07E+01	-30%
GWP-biogenic	kg CO ₂ eq.	-3.63E-02	1.07E-01	-134%
GWP-luluc	kg CO ₂ eq.	2.86E-03	4.17E-03	-31%
ODP	kg CFC 11 eq.	3.02E-11	3.67E-11	-18%
AP	mol H+ eq.	6.81E-02	1.00E-01	-32%
EP-freshwater	kg P eq.	6.33E-05	6.59E-05	-4%
EP-marine	kg N eq.	1.35E-02	1.98E-02	-32%
EP-terrestrial	mol N eq.	1.48E-01	2.17E-01	-32%
POCP	kg NMVOC eq.	4.01E-02	5.87E-02	-32%
ADP-minerals&metals*	kg Sb eq.	8.15E-06	8.54E-06	-4%
ADP-fossil*	MJ	1.93E+02	2.66E+02	-28%
WDP*	m ³	1.06E+01	1.32E+01	-20%

Results per declared unit (1 kg)

Indicator	Unit	Normal Value	Sensitivity Analyses	Δ
GWP-GHG*	kg CO ₂ eq.	1.45E+01	2.07E+01	-30%
Particulate matter	Disease incidences	1.22E-06	1.83E-06	-33%
Ionising radiation, human health	kBq U235 eq.	9.58E-01	1.35E+00	-29%
Ecotoxicity, freshwater	CTUe	5.22E+01	7.38E+01	-29%
Human toxicity, cancer	CTUh	2.23E-07	2.32E-07	-4%
Human toxicity, non-cancer	CTUh	1.21E-07	1.76E-07	-31%
Land use	Pt	2.02E+01	2.96E+01	-32%

Results per declared unit (1 kg)

Indicator	Unit	Normal Value	Sensitivity Analyses	Δ
PERE	MJ	8.75E+01	1.31E+02	-33%
PERT	MJ	8.75E+01	1.31E+02	-33%
PENRE	MJ	1.93E+02	2.66E+02	-28%
PENRT	MJ	1.93E+02	2.66E+02	-28%
FW	m ³	3.13E-01	4.09E-01	-23%

Results per declared unit (1 kg)

Indicator	Unit	Normal Value	Sensitivity Analyses	Δ
Hazardous waste disposed	kg	1.64E-07	1.77E-07	-7%
Non-hazardous waste disposed	kg	5.37E+00	8.19E+00	-34%
Radioactive waste disposed	kg	7.72E-03	1.15E-02	-33%

A general improvement in all indicators is noted, in particular GWP biogenic, Non-hazardous waste disposed and particulate matter.

8 References

ISO 14040

ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework; EN ISO 14040:2006

ISO 14044

ISO 14044:2006-10, Environmental management - Life cycle assessment - Requirements and guidelines; EN ISO 14044:2006

ISO 14025

ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures

EN 15804+A2

EN 15804+A2: 2019: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

Kiwa-EE GPI R.3.0

Kiwa-Ecobility Experts, General Programme Instructions “Product Level”, Program EE 1201 (27.02.2025)

Kiwa-EE GPI R.3.0 Annex B1



Kiwa-Ecobility Experts, General Programme Instructions “Product Level” – Annex B1 Environmental Information Programme according to EN 15804 / ISO 21930, Program EE 1203 (27.02.2025)

Background database

Sphera database version 10.9.0.31

MVLine_study report_EPD

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