ENVIRONMENTAL-PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A1*

Owner of the Declaration	dormakaba International Holding GmbH
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
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Issue date	28.06.2021
Valid to	27.06.2028

ST PRO Green RC

dormakaba Deutschland GmbH

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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1. General Information

dormakaba Deutschland GmbH

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-DOR-20210083-IBI3-EN

This declaration is based on the product category rules:

Automatic doors, automatic gates, and revolving door systems, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

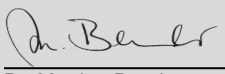
28.06.2021

Valid to

27.06.2028



Dipl.-Ing Hans Peters
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ST PRO Green RC

Owner of the declaration

dormakaba International Holding GmbH
DORMA Platz 1
58256 Ennepetal
Germany

Declared product / declared unit

The declared unit is one piece of the ST PRO Green RC automatic sliding door system comprising:

- representative value of the ES PROLINE drive system
- two sliding panels
- respective packaging materials

The LCA results for two side screens and a fanlight are presented in the appendix.

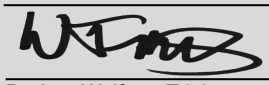
Scope:

This EPD refers to the entire life cycle of a DORMA ST PRO Green RC automatic sliding door system.
The various technical characteristics are outlined in section 2.3. The production location is dormakaba Zusmarshausen, Germany. Product components are also procured from the DORMA facilities in Ennepetal. The material and energy flows were taken into consideration accordingly. The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A1. In the following, the standard will be simplified as *EN 15804 bezeichnet*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internally ☒ externally



Dr.-Ing. Wolfram Trinius,
(Independent verifier)

2. Product

2.1 Product description/Product definition

The ST PRO Green RC convinces due to its strengthened profile system and safety. The ST PRO Green RC is tested and certified by ift Rosenheim. A continuous floor rail in the door leaf area and a sabotage protection in the drive prevent the door wings from being levered out.
Additional safety is guaranteed due to a multi-point hook locking in the area of the main closing edge.
The door variant is equipped with a hook on the secondary closing edge and burglar-resistant glazing.

The slim profile system can be used with double- and triple glazing, whereby UD values of down to 1.0 W/(m²·K) (glass heat transfer coefficient) can be realized.
Together with the thermally separated profile the energy losses are minimized

Thanks to the new ES PROLINE drive system single door leaves up to 250kg and double door leaves up to 200kg each can be moved quickly and quietly.

The low energy consumption of the sliding door drive also contributes to the overall energy efficiency of the sliding door system.
The drive is suitable for almost all sliding door applications,

including use on escape route sliding doors. For the placing on the market in the European Union/European Free Trade Associaton (EU/EFTA) (with the exception of Switzerland) the following legal provisions apply:

- *Machinery Directive 2006/42/EC*
- *2014/30/EU Electromagnetic Compatibility Directive*
- *2011/65/EU ROHS3 Directive*
- *DIN EN ISO 12100:2011-03 Safety of machinery*
- *DIN EN 16005: 2013-01 and Amendment 2015-10 Power operated pedestrian doorsets*
- *DIN EN ISO 13849- 1:2016-06 Safety of machinery*
- *DIN EN 60335-2-103: 2016-05 Household and similar electrical appliance*
- *DIN EN 61000-3-2:2015-03 Electromagnetic compatibility (EMC)*
- DIN EN 61000-3-3: 2014-03 Electromagnetic compatibility (EMC)
- *DIN EN 61000-6-2: 2005 and Amendment:2011 Electromagnetic Compatibility (EMC)*
- DI*N EN 61000-6-3:2007 and A1:2011 Electromagnetic Compatibility (EMC)*
- *DIN EN IEC 63000: 2019-05*

The CE-marking takes into account the proof of conformity with the respective harmonized standards based on the legal provisions above.

2.2 Application

With the ST PRO Green RC sliding door profile system both standard sliding doors and escape route sliding doors can be equipped by using the ES 400 PRO drive system:

Door parameter	*ES 400 PRO ES 400 PRO FST*	*ES 400 PRO ES 400 PRO FST*
Use in escape and rescue routes	✓	✓
Sliding doors	Single-panel	*Double-panel*
Opening width (mm)	*700-3000 mm*	*800-3000 mm*
Door panel weight max. (kg)	*1x250 kg*	*2x200 kg*

2.3 Technical Data

Technical data of the ES 400 PRO drive system used for ST PRO Green RC standard and emergency exit sliding doors

Constructional data ES PROLINE

Name	Value	Unit
Height	mm	100
Installation depth	mm	180
Opening and closing force	N	150
Opening speed ES 400 PRO	cm/s	10-90
Opening speed ES 400 PRO FST	cm/s	20-90
Closing speed ES 400 PRO	cm/s	10-90
Hold open time ES PROLINE	s	0-180
Supply voltage, frequency ES PROLINE	Hz	50-60
Power input ES PROLINE	W	130-180
Protection type IP	-	120
Low-voltage and EMC Directives	-	-

Product not harmonised in accordance with the CPR but in accordance with other provisions for harmonisation of the EU:

- M*achinery Directive 2006/42/EC*
- *2014/30/EU Electromagnetic Compatibility Directive*
- 2011*/65/EU ROHS3 Directive*

2.4 Delivery status

As an automatic sliding door involves a customised door system, shapes and sizes can vary considerably. The ST PRO Green RC under review has the following delivery status:

Characteristics	Dimensions
Clear height	2.2 m
Total height	2.3 m
Clear width	1.6 m
Total width	3.3 m
Surface area	4.07 m^2

The components associated with these dimensions have the following weights:

Components	Absolute
1 x drive system	24.46 kg
1 x drive system packaging	3.00 kg
2 x sliding panel	203.62 kg
Total	**231.09 kg**

The ES PROLINE operator systems are supplied in a separate box; the sliding panels and side screens are supplied on frames.

2.5 Base materials/Ancillary materials

Mass percentages of the automatic sliding door system:

Components	Percentage
Glass panes	65%
Aluminum components	19%
Steel components	11%
Plastic components	4%
Electronic components	1%
Other	1%
Total	**100%**

The products include partial articles which contain substances listed in the *candidate list* of REACH Regulation 1907/2006/EC (date: 19.01.2021) exceeding 0.1 percentage by mass: yes

- Lead (Pb): 7439-92-1 (CAS-No.) is included in some of the alloys used. The concentration of lead in each individual alloy does not exceed 4.0% (by mass).

This product/article/at least one partial article contains other carcinogenic, mutagenic, reprotoxic (CMR) substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass: no.

Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) Ordinance on Biocide Products No. 528/2012): no.

2.6 Manufacture

The ST PRO Green RC sliding panels and side screens are manufactured in the DORMA plant Zusmarshausen. The ES PROLINE drive units and requisite circuit boards are manufactured at dormakaba. The certified Quality Management system in accordance with *ISO 9001* safeguards the high quality standard of dormakaba products. It guarantees continuous improvement of the overall processes and product quality at the dormakaba locations.

2.7 Environment and health during manufacturing

No health protection measures beyond the legally specified measures are required. The maximum allowable concentrations are clearly complied with at each point of production.

Air:

Waste air generated during production is cleaned in accordance with statutory specifications. Emissions are significantly below the Technical Instructions on Air Quality.

Water/Ground:
No contamination of water or ground.
Production -related waste/ water is treated internally and redirected to the production process.

Sound protection:
Analyses have established that all values communicated inside and outside the production facilities are far below the standards applicable in Germany.
The Environmental Management system in the dormakaba production facility Ennepetal and Zusmarshausen is certified to *ISO 14001*; industrial safety is certified to *OHSAS 18001.*

2.8 Product processing/Installation

The product system is installed by specially-trained assembly teams.

2.9 Packaging

The declared unit comprises the following packaging materials and their mass percentages:

Components	Percentage
Paper and Cardboard	89%
Wood	10%
Foil	1%
Total	**100%**

More information on the possible disposal is provided in section 2.14 and 2.15.

2.10 Condition of use

No auxiliaries or consumables are incurred during maintenance, and use of the sliding door system ST PRO Green RC. Regular maintenance is advised to ensure the service life of 15 years.

For repairs or renewals, suitable spare parts are available. The energy supply for the analysed sliding door has been calculated for the reference service life of 15 years.

2.11 Environment and health during use

There are no known impact relations between product, environment and health during use.

2.12 Reference service life

The declaration of the reference service life (RSL) is imperative for EPDs covering the complete use stage (modules B1-B7), or if a use stage scenario is described, which refers to the lifetime of the product. If not all modules of the use stage are declared and no use stage scenario covering the full lifetime of the product is described, then the indication of the RSL (according to *ISO 15686:1, -2, -7 and -8*) is voluntary.

Information on the product's RSL requires specification of compatible scenarios for the product stage, construction process stage and use stage. The RSL is dependent on the properties of the prod¬uct and reference in-use conditions. These conditions shall be declared together with the RSL in clause 4 and it shall be stated that the RSL applies for the reference conditions only.

If a reference service life (RSL) cannot be declared according to ISO 15686 (or it is not relevant for consideration of the LCA), this has to be stated clearly in the EPD.

In such cases, a service life can be declared in ac-cordance with the BBSR table "Service lives of components for life cycle assessment according to BNB" (www.nachhaltigesbauen.de/baustoff-und-gebaeudedaten/nutzungsdauern-von-bauteilen.html).

It shall be unambiguously stated that a service life (not: a reference service life) in accordance with the BBSR table (or based on a manufacturer's declaration (see below)) is not a RSL according to ISO 15686.

A service life provided by the manufacturer can be declared as an alternative to the value from the BBSR table. This information shall be accompanied by explanations on the origin of the declared service life, e.g. referring to simulations, tests, an assessment of the man¬ufacturer or statistical data, etc. and shall contain the specification of the application for which the stated service life is valid (to be provided in clause 4).

The requisite information for technical building installations should be taken from *VDI 20673*.

The reference service life amounts to 15 years. This complies with 1,500,000 cycles according to *EN 16005*.

2.13 Extraordinary effects

Fire

Due to the predominant use of aluminium and steel which are considered non-flammable or flame-retardant, no additional influence on the environment in case of fire is to be expected.

Fire protection

Name	Value
Building material class	not applicable
Burning droplets	not applicable
Smoke gas development	not applicable

Water

No substances are used which have a negative impact on the ecological water quality upon contact by the device with water.

Mechanical destruction

No impacts on the environment are expected in the case of an unforeseeable mechanical destruction.

2.14 Re-use phase

With reference to the material composition of the product system in accordance with section 2.5, the following possibilities arise:

Re-use

During refurbishment or deconstruction, sliding doors can be easily segregated and reused for the same application.

Material recycling

The metallurgical materials and glass contained in the product are suitable for material recycling.

Energy recovery

The plastics contained in the product are suitable for energetic recovery.

Landfilling

Is not applicable.

2.15 Disposal

Cuttings:

Cuttings incurred during the manufacturing phase are directed towards metallurgical recycling and energy recovery. Cuttings are collected separately and collected by a disposal company. Following European Waste Catalogue (*EWC*) Codes are relevant:

- *EWC* 07 02 03 Plastic waste
- *EWC* 12 01 01 Ferrous metal filings and turnings
- *EWC* 12 01 03 Non-ferrous metal filings and turnings

Packaging:

Packaging incurred for installation in the building is directed towards energy recovery.

- *EWC* 15 01 01 Paper and cardboard packaging
- *EWC* 15 01 02 Plastic packaging

End of Life:

All materials contained in the product are directed to energy recovery or recycling process.

- *EWC* 16 02 14 Used devices with the exception of those included in 16 02 09 to 16 02 1
- *EWC* 16 02 16 Components removed from used devices with the exception of those included in 16 02 15
- *EWC* 17 02 03 Plastic
- *EWC* 17 04 02 Aluminum
- *EWC* 17 04 05 Iron and steel
- *EWC* 17 04 11 Cables with the exception of those included in 17 04 10
- *EWC* 17 02 02 Glass

2.16 Further information

Contact data for more detailed information:
Please refer to the last page of this Declaration

3. LCA: Calculation rules

3.1 Declared Unit

The declared unit is one (1) piece ST PRO Green RC. The declared unit consists of the drive system and two sliding panels. The results for two side screens and a fanlight are presented in the appendix.

Declared unit

Name	Value	Unit
Declared unit for automatic doors and gates	4.07	m^2
Grammage	56.03	kg/m^2
Mass (total system)	228.08	kg
Conversion factor to 1 kg	0.004	-

For IBU core EPDs (where clause 3.6 is part of the EPD): for average EPDs, an estimate of the robustness of the LCA values must be made, e.g. concerning variability of the

production process, geographical representativeness and the influence of background data and preliminary products compared to the environmental impacts caused by actual production.

3.2 System boundary

Type of the EPD: cradle to gate - with options
Modules A1-A3, A4, and A5
The product stage (A1-A3) begins with considering the production of the necessary raw materials and energies, including all corresponding upstream chains and the actual procurement transports. Furthermore, the entire manufacturing phase was mapped, including the treatment of production waste until the end-of-waste status (EoW) was reached. In addition, both the distribution transports (A4) and the installation including power-consuming tools, installation materials and the packaging waste generated during installation (A5) were taken into account.

Module B6
Module B6 includes the operational energy use over the Reference Service Life of 15 years.

Modules C1-C4
The modules include the environmental impacts for dismantling of the ST PRO Green RC and the treatment of the waste categories until end-of-waste status (EoW) is reached, including the associated transports at the end of the product life cycle.

Module D
Identification of the benefits and costs of the product outside the system boundary. For plastics, these consist of energy credits from thermal utilization (C3) in the form of the average European electricity mix or thermal energy from natural gas. Recycling of glass and metal scrap results in credits of the respective raw materials.

3.3 Estimates and assumptions

It was assumed that End of Life thermal waste incineration plants are plants with an R1 factor (energy conversion efficiency or energy efficiency of waste incineration plants according to the *European Waste Framework Directive*) >0.6.

3.4 Cut-off criteria

The effect associated with the neglected mass shares is less than 5% of the effect categories per module. The minimum limit of 1% total mass and the use of renewable and non-renewable primary energy is not exceeded.

3.5 Background data

The LCA software *GaBi 10.0* was used to model the life cycle. The entire manufacturing process, as well as energy consumption, were modelled on the basis of manufacturer-specific data.
However, generic background datasets were used for the upstream and downstream processes. The majority of the background datasets used were taken from the current version of the *GaBi 10.0* database. *Ecoinvent Version 3.6* and *Ecoinvent Version 2.2* datasets were only used when suitable *GaBi 10.0* datasets were not available.

Where possible, German datasets were used for modules A1-A3, and the corresponding European datasets for distribution transports (A4), installation (A5) and disposal scenarios (C modules).

3.6 Data quality

The background datasets used for accounting purposes mainly originate from the respective updated *GaBi 10.0* databases at the time of calculation.

The data for the examined products was captured on the basis of evaluations of internal production and environmental data, the collection of LCA--relevant data within the supply chain, as well as the evaluation of relevant data for the energy supply. The collected data were checked for plausibility and consistency. Good representativity can be assumed.

3.7 Period under review

Life cycle assessment data were collected in 2019 and 2020.

3.8 Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Germany

3.9 Allocation

All required energies, raw materials, and supplies could be clearly assigned to the declared product. No by--products are produced and no allocation is required. In module A1--A3, credits are issued for recycling of metallurgical waste. Packaging materials and the combustible product parts are incinerated at the end of life in a waste incineration plant. Metallurgical parts and glass are recycled. Any emissions that occur are taken into account in the model. Depending on their elementary composition and the resulting heating values, recycling credits are taken into account in module D.

3.10 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account.
The used background database has to be mentioned.

4. LCA: Scenarios and additional technical information

The following technical scenario information is required for the declared modules and optional for non-declared modules. Modules for which no information is declared can be deleted; additional information can also be listed if necessary.

The following technical information is a basis for the declared modules or can be used for developing specific scenarios in the context of a building assessment if modules are not declared (MND).

A5 is not declared including the disposal of the packaging material on the construction site, the amounts of packaging materials included in the LCA calculations must be declared as technical scenario information for Module A5.

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	unknown	l/100km
Transport distance (Truck)	525	km
Capacity utilisation (including empty runs)	55	%
Gross density of products transported	unknown	kg/m^3
Capacity utilisation volume factor	unknown	-

Installation into the building (A5)

Name	Value	Unit
Auxiliary	0.155	kg
Electricity consumption	0.04	kWh
Output substances following waste treatment on site (packaging materials)	3	kg

Reference service life

Name	Value	Unit
Life Span according to the manufacturer	15	a

Operational energy use (B6) and Operational water use (B7)

Name	Value	Unit
Electricity consumption	988.49	kWh

End of life (C1-C4)

Name	Value	Unit
Collected separately waste type waste type	228.24	kg
Collected as mixed construction waste	-	kg
Reuse	-	kg
Recycling	215.73	kg
Energy recovery	12.51	kg
Landfilling	-	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Name	Value	Unit
Net steel scrap	15.04	kg
Net aluminium scrap	8.59	kg
Net zinc scrap	1.5	kg
Collection rate	100	%
Recycling loss	0	%

5. LCA: Results

The following table shows the results of the LCA for 1 piece declared ST PRO Green RC. The results in module B6 are based on a lifetime of 15 years. The LCA results for two side screens and a fanlight are presented in the appendix.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED; MNR = MODULE NOT RELEVANT)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	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	MND	MND	MNR	MNR	MNR	X	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A1: 1 piece ST PRO Green RC

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP	kg CO_2 eq	8.44E+02	1E+01	4.99E+00	3.9E+02	8.22E-03	6.9E-01	3.15E+01	0	-1.3E+02
ODP	kg CFC11 eq	1.23E-05	1.65E-15	5.95E-15	1.17E-11	2.46E-16	2.17E-16	1.64E-07	0	-4.84E-08
AP	kg SO_2 eq	5.28E+00	4.23E-02	2.23E-03	8.19E-01	1.73E-05	2.94E-03	1.96E-02	0	-5.37E-01
EP	kg PO_4^3 eq	9.82E-01	1.06E-02	3.36E-04	9.06E-02	1.91E-06	7.34E-04	1.79E-02	0	-5.69E-02
POCP	kg Ethen eq	3.24E-01	-1.78E-02	2.01E-04	5.83E-02	1.23E-06	-1.1E-03	1.56E-03	0	-4.08E-02
ADPE	kg Sb eq	6.49E-02	8.34E-07	2.35E-05	1.3E-04	2.75E-09	6.49E-08	6.3E-05	0	-6.29E-03
ADPF	MJ	1.12E+04	1.37E+02	9.73E+00	4.32E+03	9.11E-02	9.42E+00	3.04E+01	0	-1.48E+03

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A1: 1 piece ST PRO Green RC

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PERE	MJ	2.12E+03	7.7E+00	3.91E+01	3.1E+03	6.53E-02	5.51E-01	4.56E+00	0	-4.45E+02
PERM	MJ	3.77E+01	0	-3.77E+01	0	0	0	0	0	0
PERT	MJ	2.16E+03	7.7E+00	1.36E+00	3.1E+03	6.53E-02	5.51E-01	4.56E+00	0	-4.45E+02
PENRE	MJ	1.3E+04	1.37E+02	1.08E+01	7E+03	1.47E-01	9.46E+00	3.15E+02	0	-1.67E+03
PENRM	MJ	2.81E+02	0	-3.44E-01	0	0	0	-2.8E+02	0	0
PENRT	MJ	1.33E+04	1.37E+02	1.05E+01	7E+03	1.47E-01	9.46E+00	3.44E+01	0	-1.67E+03
SM	kg	5.01E+01	0	0	0	0	0	0	0	1.66E+02
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m^3	1.01E+01	8.92E-03	1.41E-02	3.59E+00	7.56E-05	5.95E-04	9.3E-02	0	-4.32E+00

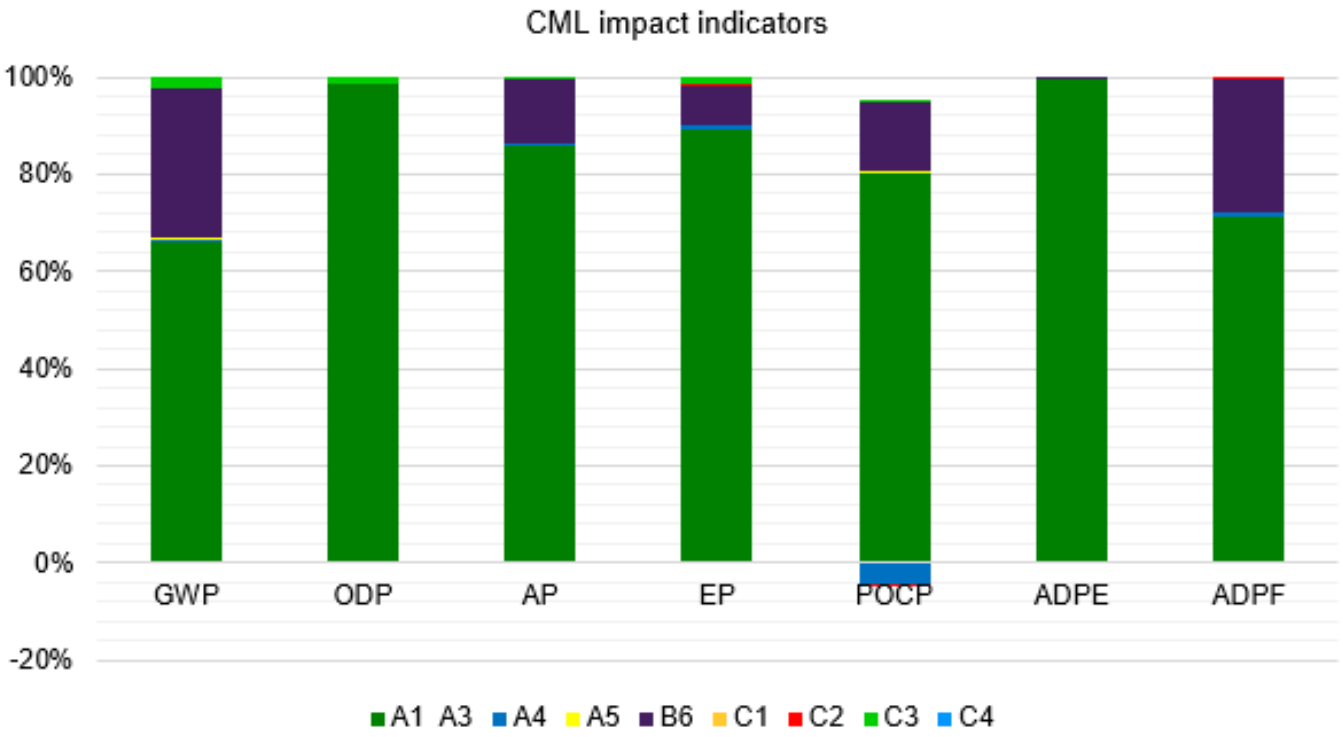
PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A1: 1 piece ST PRO Green RC

Parameter	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
HWD	kg	1.15E-01	6.38E-06	2.41E-08	2.9E-06	6.1E-11	4.12E-07	5.24E-08	0	-2.78E-06
NHWD	kg	2.81E+02	2.1E-02	1.39E-01	4.96E+00	1.05E-04	1.56E-03	3.21E+00	0	-2E+01
RWD	kg	6.79E-01	1.7E-04	3.15E-04	1.06E+00	2.24E-05	1.6E-05	5.49E-04	0	-7.71E-02
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	9.64E+00	0	0	0	0	0	2.13E+02	0	0
MER	kg	3.01E+00	0	2.98E+00	0	0	0	1.48E+01	0	0
EEE	MJ	0	0	6.57E+00	0	0	0	5.28E+01	0	0
EET	MJ	0	0	1.19E+01	0	0	0	1.11E+02	0	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

6. LCA: Interpretation



The *CML* characterization factors were used for the evaluation. The results of the *CML* categories refer to the potential environmental impacts over a period of 100 years.
The main impacts lie in the modules A1-A3 and B6. The impacts in module B6 are due to the electricity mix used for modelling the electricity consumption over a period of 15 years. In the following, the main influences on the modules A1-A3 for the indicators will be explained.

Global warming potential (GWP) in modules A1-A3 is mainly influenced by the glass (43%), the operator (25%) and aluminium (20%).
Ozone depletion potential in module A1-A3 is mainly influenced by the electronic components of the operator (>90%).
Acidification potential (AP) in modules A1-A3 is dominated by the glass (66%) and the operator (22%).
Eutrophication potential (EP) in modules A1-A3 is dominated by the operator (65%) and there the electronic components. The glass also has a significant impact on the EP (29%).
Formation potential of tropospheric ozone photochemical oxidants (POCP) in modules A1-A3 is mainly influenced by the glass.
Abiotic depletion potential for non--fossil resources in modules A1-A3 is dominated by the operator (91%) and there the electronic components.
Abiotic depletion potential for fossil resources (ADPF) in modules A1-A3 is dominated by the glass (52%).

7. Requisite evidence

8. References

Standards

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EN 60335-2-103
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DIN EN 61000-3-2:2015-03, Electromagnetic compatibility (EMC) - Part 3-2:
Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase).

EN 61000-3-3
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Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection.

EN 61000-6-2
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Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (recast) **CML**
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Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast) **Ordinance on Biocide Products No. 528/2012**
Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products **Product Category Rules Part A**
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