ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration ASS

ASSA ABLOY

Programme holder

Institut Bauen und Umwelt e.V. (IBU)

Publisher

Institut Bauen und Umwelt e.V. (IBU)

Declaration number

EPD-ASA-20150276-IAB1-EN

Issue date

29.09.2015

Valid to

28.09.2020

Securistyle – Parallel PX Plus hinge set **ASSA ABLOY**



Institut Bauen und Umwelt e.V.



General Information

ASSA ABLOY - Securistyle

Programme holder

IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Rerlin Germany

Declaration number

EPD-ASA-20150276-IAB1-EN

This Declaration is based on the Product **Category Rules:**

Locks and fittings, 07.2014 Product Category Rules (PCR) tested and approved by the

independent expert committee (SVR)

Issue date

29.09.2015

Valid to

28.09.2020

Prof. Dr.-Ing. Horst J. Bossenmayer (President of Institut Bauen und Úmwelt e.V.)

Dr.-Ing. Burkharty

(Managing Director IBU)

Parallel PX Plus hinge set

Owner of the Declaration

Securistyle Ltd, Princess Elizabeth Way, Cheltenham, GL51 7RE, UK

Declared product / Declared unit

The declaration represents 1 window hinge set Parallel PX Plus - consisting of the following items:

· 2 hinge sides

Scope:

This declaration and its LCA study are relevant to the Parallel PX Plus hinge sets manufactured in Securistyle Ltd, United Kingdom (Cheltenham).

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.

Verification

The CEN Standard EN 15804 serves as the core PCR Independent verification of the declaration according to ISO 14025 |x|

internally

externally



Product

Product description

Product name: Parallel PX Plus hinge set

Product characteristics:

- Parallel PX Plus hinge set consists of two or more hinges. This declaration reflects a PX Plus hinge set consisting of two hinges.
- Hinges are assembled with a number of patented features including an integral tie-bar, eccentric pivot for parallel adjustment and reinforced pivot points
- Hinges provide parallel opening of vents up to 250mm, but can be restricted to smaller openings if required
- Product is normally used in commercial applications and is produced in Austenitic Stainless Steel for corrosion resistance & strength
- Product is capable of carrying vents up to 2m wide & 3m high
- Can provide manual or automated operation

Application

Parallel PX Plus consist of a whole range of window hinges offered in various sizes to provide a solution for varying commercial vents.

2.3 **Technical Data**

The table presents the technical properties of Parallel PX Plus hinge set.

Parameter	Value
Available Finishes:	Natural stainless steel finish
Available Sizes:	PX0350 (350mm long) PX0450 (450mm) PX0670 (670mm) PX0950 (950mm)
Width:	46mm
Height:	20mm

Placing on the market / Application rules

The standards that applicable to Parallel PX Plus hinge set are:

- EN 13126-1;
- EN 13126-6;
- BS 6375 Pt1 & 2



2.5 Delivery status

Parallel PX Plus hinge sets are delivered packed by 10 hinges in a box sizes - 935mm x 95mm x 110mm.

2.6 Base materials / Auxiliary materials

The average composition for Parallel PX Plus hinge set follows:

Component	Percentage in mass (%)
Zinc	5.26
Stainless Steel	94.26
Plastic	0.39
Others	0.09
Total	100.00

Waste codes according to European Waste Catalogue and Hazardous Waste List - Valid from 1 January 2002:

EWC 12 01 01 Ferrous metal filings and turnings EWC 12 01 03 Non-ferrous metal filings and turnings

EWC 08 02 01 Waste coating powders.

2.7 Manufacture

The manufacturing processes occur at Securistyle Ltd factory:

- 1) Stainless steel processing punching, rolling, forming & cropping of strip for links and track
- 2) Spin riveting of sub-assemblies
- 3) Final build assembly manual assembly, riveting and complete packing of product.

The factory of Securistyle Ltd, Princess Elizabeth Way, Cheltenham Glos UK GL51 7RE has a certification of Quality Management system in accordance with ISO 9001:2008 (Certificate Number FM611016)

Location of suppliers:

Stainless Steel Strip (coil): UK Plastic Moulding: UK & China Plated Zinc Castings: UK

Steel Rivets: UK

Steel Pressing (Tie-bar & slider inner): UK

Brass bush : ŬK.

2.8 Environment and health during manufacturing

Securistyle Ltd is committed to producing and distributing window opening solutions, where health & safety is the primary focus for all employees and associates.

- Environmental operations, GHG, energy, waste, VOC, surface treatment and H&S are routinely monitored. Inspections, audits, and reviews are conducted periodically to ensure that applicable standards are met and Environment Management program effectiveness is evaluated.
- The manufacturing site in Cheltenham has certification of Environmental Management to ISO 14001:2004.
- Code of Conduct covers human rights, labour practices and decent work. Management of ASSA ABLOY is aware of their environmental roles and responsibilities, providing appropriate training, supporting accountability and recognizing outstanding performance.

 Any waste metals during machining are separated and recycled.

2.9 Product processing/Installation

Parallel PX Plus hinge sets are distributed through and installed by trained installation technicians, such as facade engineers, curtain wall builders, etc. adhering to local/national standards and requirements.

2.10 Packaging

Parallel PX Plus hinges are by 10 individual hinges in a cardboard box. The packaging is fully recyclable with dimensions: 935mm x 95mm x 110mm.

Material	Value (%)
Cardboard/paper	100.0
Total	100.0

All materials incurred during installation are directed to a recycling unit.

Waste codes according to European Waste Catalogue and Hazardous Waste List - Valid from 1 January 2002:

EWC 15 01 01 paper and cardboard packaging.

2.11 Condition of use

In façade openings fitted with the opening cavity of a vent.

Must be maintained in line with Securistyle Ltd recommendations - cleaning of dust & debris and light lubrication with engineering oil.

2.12 Environment and health during use

There is no harmful emissive potential. No damage to health or impairment is expected under normal use corresponding to the intended use of the product.

2.13 Reference service life

Approved for 20,000 cycles under normal working conditions, 12 years depending on cycle frequency.

2.14 Extraordinary effects

Fire N/A

Contain no substances that have any impact on water in case of flood.

Mechanical destruction

No danger to the environment can be anticipated during mechanical destruction.

2.15 Re-use stage

The following possibilities arise with reference to the material composition of the door closer.

Re-use

The product is possible to re-use during the reference service life and be moved from one door to another.

Material Recycling

The majority, by weight, of components is stainless steel, which can be recycled. The plastic components can be used for energy recovery within a waste incineration process.



Waste codes according to European Waste Catalogue and Hazardous Waste List - Valid from 1 January 2002:

EWC 17 02 03 plastic

EWC 17 04 04 zinc

EWC 17 04 05 iron and steel.

2.16 Disposal

No disposal is foreseen for the product nor for the corresponding packaging.

2.17 Further information

Securistyle Ltd

3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 unit of Parallel PX Plus window hinge set (consisting of two hinge sides) as specified in Part B requirements on the EPD for PCR Locks and fittings: (mechanical & electromechanical locks & fittings)

Declared unit

Name	Value	Unit
Declared unit	1	punit of window hinge set
Mass (without packaging)	3.27	kg
Conversion factor to 1 kg	0.306	-

3.2 System boundary

Type of the EPD: cradle to gate - with options The following life cycle stages were considered:

Production stage:

- A1 Raw material extraction and processing
- A2 Transport to the manufacturer and
- A3 Manufacturing

Construction stage:

- A4 Transport from the gate to the site
- A5 Packaging waste processing

End-of-life stage:

- C2 Transport to waste processing
- C4 Disposal (landfill)

This includes provision of all materials, products and energy, packaging processing and its transport, as well as waste processing up to the end-of waste state or disposal of final residues.

 D - Declaration of all benefits or recycling potential from EOL and A5.

3.3 Estimates and assumptions

EoL:

In the End-of-Life stage, for all the materials which can be recycled, a recycling scenario with 100% collection rate was assumed.

3.4 Cut-off criteria

In the assessment, all available data from the production process are considered, i.e. all raw materials used, auxiliary materials (e.g. lubricants), thermal energy consumption and electric power consumption - including material and energy flows contributing less than 1% of mass or energy (if

Princess Elizabeth Way Cheltenham GL51 7RE (UK) http://www.securistyle.co.uk/

available). In case a specific flow contributing less than 1% in mass or energy is not available, worst case assumption proxies are selected to represent the respective environmental impacts.

Impacts relating to the production of machines and facilities required during production are out of the scope of this assessment.

3.5 Background data

For life cycle modeling of the considered products, the GaBi 6 Software System for Life Cycle Engineering, developed by thinkstep AG, is used /GaBi 6 2013/. The GaBi-database contains consistent and documented datasets which are documented in the online GaBi-documentation /GaBi 6 2013D/. To ensure comparability of results in the LCA, the basic data of GaBi database were used for energy, transportation and auxiliary materials.

3.6 Data quality

The requirements for data quality and background data correspond to the specifications of the /IBU PCR Part A/.

thinkstep AG performed a variety of tests and checks during the entire project to ensure high quality of the completed project. This obviously includes an extensive review of project-specific LCA models as well as the background data used.

The technological background of the collected data reflects the physical reality of the declared products. The datasets are complete and conform to the system boundaries and the criteria for the exclusion of inputs and outputs.

All relevant background datasets are taken from the GaBi 6 software database. The last revision of the used background data has taken place not longer than 10 years ago.

3.7 Period under review

The period under review is 2013/14 (12 month average).

3.8 Allocation

Regarding incineration, the software model for the waste incineration plant (WIP) is adapted according to the material composition and heating value of the combusted material. In this EPD, the following specific life cycle inventories for the WIP are considered for:

- Waste incineration of plastic
- Waste incineration of paper

Regarding the recycling material of metals, the metal parts in the EoL are declared as end-of-waste status.



Thus, these materials are considered in module D. Specific information on allocation within the background data is given in the GaBi dataset documentation.

3.9 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.

4. LCA: Scenarios and additional technical information

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).

Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment on site (Paper packaging)	0.09	kg

Reference service life

Name	Value	Unit
Reference service life	12	а

End of life (C2-C4)

Name	Value	Unit
Collected separately Zinc, steel, plastics	3.266	kg
Collected as mixed construction waste – construction waste for landfilling	0.003	kg
Reuse Plastics	0.013	kg
Recycling Zinc, steel	3.253	kg
Construction waste for landfilling	0.003	kg

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

Name	Value	Unit
Collected separately waste type (including packaging)	3.36	kg
Recycling Zinc	5.12	%
Recycling Steel	91.70	%
Reuse Plastics	0.38	%
Reuse Paper packaging (from A5)	2.71	%
Loss Construction waste for landfilling (no recycling potential)	0.09	%



5. LCA: Results

Results shown below were calculated using CML 2000 – Apr. 2013 Methodology.

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PER PENF PENF PENF SM RSF NRS FW RESU hinge	T RE MM RT F F Set Set O D D D	Total use Non ren Non Total Use S OF Tit Haze	e of renewable prenewable prenewable use of nor Use of Jee of nor Use HELCA	waste disp	ergy as e y resour tion imary en nergy as y energy tion vable prir cces lary mate seconda le secon esh wate TTPUT	ergy resort energy of as mater mary energy fuels dary fuels	rrier naterial ources carrier rial ergy S Un [kg	Unit [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]		2.1: 0.00 2.1: 1.7: 0.00 1.7: 2.11 0.00 0.00 9.66 C.A 1.1 3.5:	1-A3 5E+01 5E+02 5E+02 5E+02 5E+02 6E+00 0E+00 0E+00 1E-02 ATEG 1-A3 1E-02 9E+00	A4 4.34E-0 - 1.11E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 2.52E-0 1.39E-0	0 4.2 0 0.0 0 0.0 0 0.0 0 0.0 5 3.7 : One	A5	1.1 0.00 0.00 3.0 e of	- 4E-03 - 1E-01 0E+00 0E+00 7E-06 Para C2 2E-07 9E-05	9.98E 1.51E 0.00E 0.00E 0.00E 7.86E IIel P	:-04 +00 +00 +05 X P	- 2.94E+00 5.92E+01 0.00E+00 0.00E+00 0.00E+00 2.03E-02 lus D 2.56E-03 1.34E+00		
PER PENF PENF PENF SM RSF NRS FW RESU hinge Parame HWI NHW RWI	E	Total use Non ren Non Total Use S OF Tit Hazz	e of renewable prenewable use of not use of non relations where the LC/	wable primary energy utiliza wable primary energy utiliza on renew resour f second newable renewable of net fr A — OU meter waste disparate dispar	ergy as e y resour tion imary en nergy as y energy tion rable prir rces ary mate seconda le secon esh wate TPUT	ergy resort energy of as mater mary energy fuels dary fuels	rrier paterial purces carrier rial ergy S Un [kg [kg	Unit [MJ]		2.1: 0.00 2.1: 1.73 0.00 1.73 2.1: 0.00 9.66 1.11 3.55 7.5	1-A3 5E+01 0E+00 5E+01 5E+02 0E+00 0E+00 0E+00 1E-02 ATEG 1-A3 1E-02 9E+00 6E-03	A4 4.34E-0 - 1.11E+0 0.00E+0 0.00E+0 0.00E+0 0.00F-0 ORIES A4 2.52E-0 1.39E-0 1.45E-0	2 3.3 0 4.2 0 0.0 0 0.0 0 0.0 0 0.0 5 3.7 Cone	A5	1.1 0.00 0.00 3.0 e of	- 4E-03 - 1E-01 0E+00 0E+00 7E-06 Para C2 2E-07 9E-05 5E-07	9.98E 1.51E 0.00E 0.00E 7.86E 110E P 1.06E 3.00E 6.03E	:-04 :-02 +00 +00 :-05 X P	- 2.94E+00 5.92E+01 0.00E+00 0.00E+00 2.03E-02 lus D 2.56E-03 1.34E+00 7.20E-04		
PER PENF PENF PENF SM RSF NRS FW RESU hinge Parame HWI NHW RWI CRU	E	Total use Non ren Non Total Use S OF Tit Hazz Non ha	use of non response of non res	ry energ utiliza wable pri rimary ene primary ene primary ene primary energy en renew resour f second newable enewable of net fr aste disp waste disp ts for re-	ergy as e y resour tion imary en nergy as y energy tion vable prir ces lary mate seconda le secon resh wate trput	ergy resort energy of as mater mary energy fuels dary fuels	rrier laterial curces carrier rial laterial late	Unit [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]		2.11 0.00 1.75 2.11 0.00 0.00 9.66 1.11 3.55 7.5	1-A3 5E+01 0E+00 5E+01 5E+02 0E+00 0E+00 0E+00 1E-02 ATEG 1-A3 1E-02 9E+00 6E-03 0E+00	A4 4.34E-0 1.11E+0 0.00E+0 0.00E+0 0.00E+0 3.07E-0 ORIES A4 2.52E-0 1.39E-0 1.45E-0 0.00E+0	2 3.3 0 4.2 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 6 2.9 4 3.2 6 2.4 0 0.0	A5	1.1 0.00 0.00 3.0 e of 2.5 1.3 1.4	- 4E-03 - 1E-01 0E+00 0E+00 7E-06 Para C2 2E-07 9E-05 5E-07 0E+00	9.98E - 1.51E 0.00E 0.00E 7.86E 11.06E 3.00E 6.03E	:-04 :-02 +00 +00 +00 X P :-05 X P :-06 :-03 :-07 :-07	- 2.94E+00 5.92E+01 0.00E+00 0.00E+00 0.00E+00 2.03E-02 IUS D 2.56E-03 1.34E+00 7.20E-04 0.00E+00		
PER PENF PENF PENF SM RSF NRS FW RESU hinge Parame HWI NHW RWI CRU	E E E E E E E E E E E E E E E E E E E	Total use Non ren Non Total Use S OF Tit Hazz Non ha Radi Co	e of renewable prenewable prenewable use of nor Use of second prenewable prenewable use of nor Use of nor Use prenewable	wable primary energy utiliza wable primary energy utiliza primary energy utiliza primary energy utiliza primary energy en	ergy as e y resour tion imary en nergy as y energy tion rable prir rees lary mate seconda le secon esh wate trput cosed isposed posed use ing	ergy resort energy of as mater mary energy fuels dary fuels	rrier paterial purces carrier rial ergy S Un [kg [kg [kg [kg	Unit [MJ] [MJ]		2.11 0.00 2.13 1.77 0.00 1.73 2.11 0.00 9.6 E C/ A 1.1 3.55 7.5 0.00 0.00	1-A3 5E+01 5E+02 5E+02 5E+02 6E+00 6E+00 0E+00 1E-02 1-A3 1E-02 9E+00 6E-03 0E+00 0E+00	A4 4.34E-0 1.11E+0 0.00E+0 0.00E+0 3.07E-0 ORIES A4 2.52E-0 1.39E-0 1.45E-0 0.00E+0	2 3.3 0 4.2 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 1 3.7 1 3.2 4 3.2 4 3.2 6 2.4 0 0.0 0 0 0 0.0 0 0 0 0.0 0 0 0 0.0 0 0 0 0.0 0 0 0 0.0 0 0 0 0.0 0 0	A5	1.1 0.00 0.00 3.0 e of 1 2.5 1.4 0.00 0.00	- 4E-03 - 1E-01 0E+00 0E+00 0E+00 7E-06 Para C2 2E-07 9E-05 5E-07 0E+00 0E+00	9.98E 1.51E 0.00E 0.00E 7.86E 110E P C2 1.06E 3.00E 6.03E 0.00E	-04 +00 +00 -05 X P -06 -03 -07 +00 +00	- 2.94E+00 5.92E+01 0.00E+00 0.00E+00 0.00E+00 2.03E-02 lus D 2.56E-03 1.34E+00 7.20E-04 0.00E+00 0.00E+00		
PER PENF PENF PENF SM RSF NRS FW RESU hinge Parame HWI NHW RWI CRU	E E E E E E E E E E E E E E E E E E E	Renewa Total use Non ren Non Total Use S OF Tit Hazz Non ha Radi Co Matee	e of renewable prenewable use of nor Use of Jacob Incomplete Incom	ry energy utilizary energy utilizary energy utilizary energy utilizary energy utilizary energy resour feccond enewable energy energ	ergy as e y resourtion imary en nergy as y energy tion rable prir rces lary mate seconda le secon esh wate posed isposed posed use ing covery	ergy resort energy of as mater mary energy fuels dary fuels	rrier laterial curces carrier rial laterial late	Unit [MJ] [MJ]		2.11 0.00 2.13 1.77 0.00 1.73 2.11 0.00 9.6 E C/ A 1.1 3.55 7.5 0.00 0.00	1-A3 5E+01 0E+00 5E+01 5E+02 0E+00 0E+00 0E+00 1E-02 ATEG 1-A3 1E-02 9E+00 6E-03 0E+00	A4 4.34E-0 1.11E+0 0.00E+0 0.00E+0 0.00E+0 3.07E-0 ORIES A4 2.52E-0 1.39E-0 1.45E-0 0.00E+0	2 3.3 0 4.2 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 1 3.7 1 3.2 4 3.2 4 3.2 6 2.4 0 0.0 0 0 0 0.0 0 0 0 0.0 0 0 0 0.0 0 0 0 0.0 0 0 0 0.0 0 0 0 0.0 0 0	A5	1.1 0.00 0.00 3.0 e of 1 2.5 1.4 0.00 0.00	- 4E-03 - 1E-01 0E+00 0E+00 7E-06 Para C2 2E-07 9E-05 5E-07 0E+00 0E+00 0E+00	9.98E - 1.51E 0.00E 0.00E 7.86E 1.06E 3.00E 6.03E 0.00E 0.00E	:-04 +00 +00 +00 :-05 X P 1 :-06 :-07 :-07 :-07 :-07 :-07	- 2.94E+00 5.92E+01 0.00E+00 0.00E+00 0.00E+00 2.03E-02 lus D 2.56E-03 1.34E+00 7.20E-04 0.00E+00 0.00E+00		
PER PENF PENF PENF SM RSF NRS FW RESU hinge Parame HWI NHW RWI CRU	E E E E E E E E E E E E E E E E E E E	Renewa Total use Non ren Non Total Use S OF Tit Hazz Non ha Radi Co Matee	e of renewable prenewable prenewable use of nor Use of second prenewable prenewable use of nor Use of nor Use prenewable	ry energy utilizary energy utilizary energy utilizary energy utilizary energy utilizary energy resour feccond enewable energy energ	ergy as e y resourtion imary en nergy as y energy tion rable prir rces lary mate seconda le secon esh wate posed isposed posed use ing covery	ergy resort energy of as mater mary energy fuels dary fuels	rrier paterial purces carrier rial ergy S Un [kg [kg [kg [kg	Unit [MJ] [MJ]		2.11 0.00 1.73 2.11 0.00 0.00 9.66 1.11 3.55 7.5 0.00 0.00	1-A3 5E+01 5E+02 5E+02 5E+02 6E+00 6E+00 0E+00 1E-02 1-A3 1E-02 9E+00 6E-03 0E+00 0E+00	A4 4.34E-0 1.11E+0 0.00E+0 0.00E+0 3.07E-0 ORIES A4 2.52E-0 1.39E-0 1.45E-0 0.00E+0	2 3.3 0 4.2 0 0.0 0 0.0 0 0.0 0 0.0 5 3.7 1 3.2 6 2.4 0 0.0 0 0 0 0.0 0 0 0 0 0.0 0 0 0 0 0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	A5	1.1 0.00 0.00 3.0 2.5 1.3 1.4 0.00 0.00	- 4E-03 - 1E-01 0E+00 0E+00 7E-06 Para C2 2E-07 9E-05 5E-07 0E+00 0E+00 0E+00	9.98E - 1.51E 0.00E 0.00E 7.86E 1.06E 3.00E 6.03E 0.00E 0.00E	:-04 +00 +00 +00 :-05 X P 1 :-06 :-07 :-07 :-07 :-07 :-07	- 2.94E+00 5.92E+01 0.00E+00 0.00E+00 0.00E+00 2.03E-02 lus D 2.56E-03 1.34E+00 7.20E-04 0.00E+00 0.00E+00		



6. LCA Interpretation

This chapter contains an interpretation of the Life Cycle Impact Assessment categories. Stated percentages in the whole interpretation are related to the overall life cycle, excluding credits (module D).

The production stage (modules A1-A3) contributes between 98% and 100% to the overall results for all the environmental impact assessment categories hereby considered. Within the production stage, the main contribution for all the impact categories is the production of steel and zinc mainly due to the energy consumption on this process. Steel and zinc

account in total with almost 99% to the overall mass of the product, therefore, the impacts are in line with the mass composition of the product. The environmental impacts for the transport (A2) have a negligible impact within this stage.

In the end-of-life stage, there are loads and benefits (module D, negative values) considered. The benefits are considered beyond the system boundaries and are declared for the recycling potential of the metals and for the credits from the incineration process (energy substitution).

7. Requisite evidence

Not applicable in this EPD.

8. References

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EN 15804

EN 15804:2012+A1:2014: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

GaBi 6 2013

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ISO 14025

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

EN 1906:2012

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EN13126-1

Building hardware for windows and door height windows; requirements and test methods

EN13126-6

Building hardware for windows and door height windows; requirements and test methods variable geometry stay hinges

BS6375 Pt1 & 2

Performance of windows and doors. Classification for weather tightness and guidance on selection and specification

ISO 9001:2008

Quality management systems - Requirements

ISO 14001:2009

Environmental management systems - Requirements with guidance for use (ISO 14001:2004 + Cor. 1:2009)

EWC

European Waste Catalog



9. Annex

Results shown below were calculated using TRACI Methodology.

DESC	RIP	TION O	F THE	SYST	ЕМ В	DUND	ARY (X = IN	CLU	DED IN	1 L	.CA; N	/IND :	= MOI	DULE NO	OT DE	CL/	ARED)	
	PRODUCT STAGE CONSTRUCTI ON PROCESS STAGE				USE STAGE								END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARYS		
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement ¹⁾	Refurbishment ¹⁾	Operational	och (Biolio	Operational water use	De-construction demolition Transport		Waste processing	Disposal	Reuse-	Recovery- Recycling- potential	
A1	A2	A3	A4	A5	B1	B2	В3	B4	B5	B6		В7	C1	C2	C3	C4		D	
Х	Χ	Х	Х	Х	MND	MND	MND	MND	MN			MND	MND	X	MND	Х		Χ	
		OF TH				MENT	AL IM		: On	_	9 0		allel F		ıs hinge				
Paran				aramete			_	Unit		A1-3		A4		A5	C2	C4		D	
GW		Depletion			potential tratosphe	ric ozone		CFC11-E		1.41E+0 1.23E-0		7.99E-0		29E-01 28E-13	7.99E-03 4.07E-14			5.49E+00 -1.34E-11	
Al		Λoidifi	cation no	layer	land and	water	The c	g SO₂-Eo	. 1	9.92E-0	2	4.78E-0	24 27	57E-05	4.78E-05	9.62E	06	3.68E-02	
E		Acidiii		nication p		water		kg N-eq.]	-	3.34E-0	-	3.38E-		06E-06	3.38E-06	+		1.30E-03	
Sm		Grou			nation pot	ential	_	g O₃-eq.		1.05E+0	_	9.84E-(33E-04	9.84E-04	+		4.18E-01	
Resou					resource		1	[MJ]	,	9.56E+0	-	1.59E-0		25E-03	1.59E-02	+		2.03E+00	
							F: On	E: One piece of Parallel PX Plu									1.402 00 2.002100		
Param				rametei		<u>, </u>					A4	A5 C2			C4		D		
PER	E R	tenewable	primary	energy	as energ	y carrie	r	[MJ]	2	2.15E+01	T	-		-	-	-		-	
PER	М	Renewak		ry energ		ces as		[MJ]	(0.00E+00				-	-		-		
PER	Т	Total us		ewable p sources	orimary e	nergy		[MJ] 2.1			4	4.34E-02	2 3.38E-03		3.38E-03 4.34E-03		-04	2.94E+00	
PENF	RE	Non rene		imary er carrier	nergy as	energy		[MJ]			75E+02 -				-	-		-	
PENF	RM	Non renev		mary en ilization	ergy as r	material		[MJ]			00 -							-	
PENF	RT .	Total use		newable sources	e primary	energy		[MJ]			02 1.11E+00		00 4.24E-02		4.24E-02 1.11E-01		-02	5.92E+01	
SM		U	se of sec	condary	material		[kg]			2.16E+00	0	0.00E+0	0.0)E+00	+00 0.00E+00		+00	0.00E+00	
RSF	=	Use o	of renewa	able seco	ondary fu	iels		[MJ]	(0.00E+00	0).00E+0	0.0)E+00	0.00E+00	0.00E+00		0.00E+00	
NRS	F	Use of r	non rene	wable se	econdary	fuels		[MJ]	(0.00E+00	0	0.00E+0	0.0)E+00	0.00E+00	0.00E-	+00	0.00E+00	
FW			Use of n					[m³]		9.61E-02	_	3.07E-0		6E-04	3.07E-06	7.86E		2.03E-02	
RESU hinge			IE LCA	\	TPUT	FLOW	/S AN	D WAS	STE	CATE	30	RIES	: One	piec	e of Para	allel P	ΧP	lus	
Param			Parar	neter			Un	it		A1-A3	T	A4		A5	C2	C4		D	
HWI	D	Haza	rdous wa	aste disp	osed		[kç	9]		1.11E-02	2	2.52E-06	3 2.9	2E-06	2.52E-07	1.06E	-06	2.56E-03	
NHW	/D	Non ha	zardous	waste di	sposed		[kg	9]	:	3.59E+00	1	1.39E-0	4 3.2	4E-03	1.39E-05	3.00E	-03	1.34E+00	
RWI	D	Radio	active w	aste disp	oosed		[ko	9]		7.56E-03	1	1.45E-06	3 2.4	8E-06	1.45E-07	6.03E-07		7.20E-04	
CRI	J	Cor	mponent	s for re-	use		[kg	9]	(0.00E+00	0	0.00E+0	0.0	DE+00	0.00E+00	0.00E-	+00	-	
MFF	₹	Ma	aterials fo	or recycli	ing		[kg	9]	(0.00E+00	0	0.00E+0	0 9.1	2E-02	0.00E+00	0.00E-	+00	-	
MEF	₹	Materi	als for er	nergy re	covery		[kg	9]	(0.00E+00	0	0.00E+0	0.0	DE+00	0.00E+00	0.00E-	+00	-	
EEE		Expo	rted elec	ctrical er	nergy		[M	J]	(0.00E+00	0	0.00E+0	0 1.6	3E-01	0.00E+00	6.16E	-02	-	
EET	Г	Exp	orted the	rmal en	[MJ] 0.00E+00 0.00E+00						00 4.61E-01 0.00E+00 1.69					-			



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