



## ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN 15804

EPD registration number: S-P-01476

issue date 2019-06-02

valid until 2023-12-05



[www.bildex.ru](http://www.bildex.ru)



EPD registration number: S — P — 01476  
 EPD validation number: 3013—EPD—19—0026

## EPD Programme

The International EPD® System  
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## Owner of Environmental Product Declaration

BILDEX LLC  
 Baksheevo village, Furmanov district,  
 Ivanovo region, 155523, Russian Federation  
[www.bildex.ru](http://www.bildex.ru)  
 BILDEX LLC has the sole ownership, liability,  
 and responsibility for this EPD

## Product

Aluminium Composite Panels  
 Sandwich panels

## Manufacturer

**BILDEX LLC**

## Production site

Baksheevo village, Furmanov district,  
 Ivanovo region, 155523, Russian Federation

## Declared unit

**1 m<sup>2</sup> of Aluminium Composite Panels**



EPD Based on  
 Product Category Rules (PCR)

The International EPD® System's PCR Fabricated  
 products made out of metal composite material  
 (MCM) 2015:04, UN CPC 4299 Version 1.01, 2015-08-19

## PCR Review Conducted by

The Technical Committee of the  
 International EPD® System  
 Review chair: Claudia Pena  
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## EPD Prepared by

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## System boundaries

- ☐ Cradle to gate  
☒ Cradle to gate with option  
☐ Cradle to grave

## Verification

Independent third party verification of the declaration  
 and data according ISO 14025:2006

- ☒ EPD verification ☐ EPD process certification

## Procedure for follow-up of data during EPD validity involves third-party verifier

- ☒ Yes  
☐ No

## LCA prepared by

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## Approved and Verified by

Building Research Institute – Certification Company Ltd.  
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BILDEX LLC is Russia's leading manufacturer of aluminium composite panels, which are widely used in suspended ventilated facade fittings, interior design, and in many other areas of construction.

Bildex was established in 2005 as a company specializing in the manufacture of aluminium composite panels used as cladding material in the construction, advertising and manufacturing industries.

The company has 60 representative offices including its own branches.

The manufacturing plant is located in Furmanov city, Ivanovo region, and has more about 200 employees.

The production site has been certified according to EN ISO 9001. The plant has three aluminium composite panel production lines, a coil coating line.

The panels are manufactured with reliable high-technology equipment in strict accordance with technology. Every operation section from raw material to the finished product is assigned to a quality control department.

### 3.1.Product description

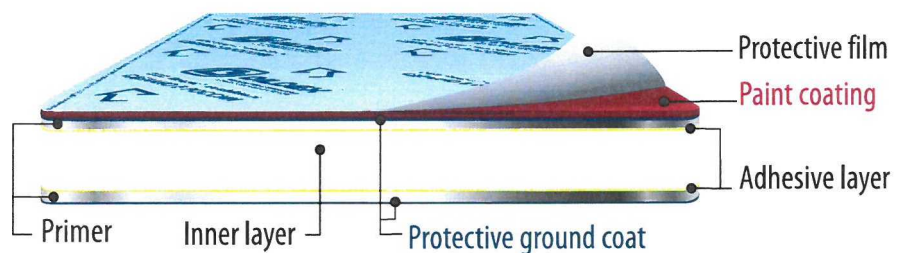
BILDEX aluminium composite panel is a multilayer material consisting of two outer aluminium sheets and an inner layer from polymer or a fire-resistant material. The face side of the panel is coated with UV- and environment resistant PVDF and FEVE-base resins. The back of the panel is coated with a protective rust-preventive ground coat.

High performance characteristics, easy processing and a wide range of colours of the BILDEX material allow architects and designers to implement their bold ideas and add individual style to buildings and other objects.

This environmental product declaration contains three types of sandwich panels, including seven modifications.

Types of MCM	Type of inner layer	Modifications
BILDEX PE FRM(O)	Plastic filler / polymer	BILDEX PE 4-04 BILDEX PE 4-05 FRM(O) 2-02 FRM(O) 3-02 FRM(O) 3-03
BILDEX FR	Hard-combustible	BILDEX FR 4-05
BILDEX A2	Non-combustible	BILDEX A2 4-05

### Structure of BILDEX Aluminium Composite Panels:





### 3.2 Application of BILDEX Aluminium Composite Panels.

BILDEX Aluminium Composite Panels are cost-effective prefabricated elements for use in ventilated facades, compartment structures, partition walls. Typical applications include industrial and commercial use:

a) BILDEX PE and FRM(O): production of objects of internal and outdoor advertising, internal and external facing works

b) BILDEX FR and BILDEX A2: internal and external facing works demanding materials with certain characteristics of fire safety

BILDEX panels have the necessary certificates confirming their suitability for construction.

BILDEX Aluminium Composite Panels have undergone all the necessary tests for compliance with fire safety regulations and thus can be used for suspended ventilated facade fittings and the interior finish of buildings.

### 3.3 Technical data

BILDEX Aluminium Composite Panels are 2-4 mm thin sandwich panels with aluminium top layers (0.2-0.5 mm) and a generally thermoplastic core layer.

The technical data listed below is of relevance for the product.

Name	Unit	BILDEX PE		BILDEX A2	BILDEX FR	FRM (O)		
		4—04	4—05	4—05	4—05	2—02	3—02	3—03
Length	mm	1200—6000		1200—6000	1200—6000	1200—6000		
Width	mm	900—1575		900—1575	900—1575	900—1575		
Thickness	mm	4		4	4	2	3	3
Thickness of aluminium layer (EN 485)	mm	0,4	0,5	0,5	0,5	0,2	0,2	0,3
Alloy of aluminium layer (EN 485)		3003, 5005						
Coating		Based on PVDF and FEVE polymer resin						
Weight	Kg/m <sup>2</sup>	5,5—6,5		7,8—8,2	7,4—8,4	2,6—3,7	2,6—3,7	3,0—4,5
Ultimate tensile strength	N/mm <sup>2</sup>	≥ 35	≥ 35	≥ 35	≥ 50	≥ 25	≥ 25	≥ 30
Modulus of elasticity	N/mm <sup>2</sup>	≥ 10000	≥ 10000	≥ 10000	≥ 12000	≥ 10000		
Elongation	%	≥ 5	≥ 5	≥ 5	≥ 5	≥ 5	≥ 5	≥ 5
Fire classification (according fire test of building products Standard EN13501-1)		D s2 d0	D s2 d0	A s1 d0	B s1 d0	D s1 d0	D s1 d0	D s1 d0

### 3.4 Base materials

Average composition as % by weight

Name	Value
Aluminium	34,9%
Inner layer	57,8%
Adhesive film	2,3%
Protective coating	2,1%
Coating materials	2,9 %
Total:	100.0%

The inner layer of aluminium composite panels consists of the following substances: various models of low density polyethylene, Sevilen (copolymer of ethylene with vinyl acetate), highly-filled hard-combustible compositions Simplen, Ekopiren (mineral fire retardant based on magnesium hydroxide), Fusabond adhesive resin, micromorbic filler (microcalcite).

For different types of aluminium composite panels, the composition and quantity of inner layer components is determined by the official Process cards.

### 3.5 Volatile organic compounds

The composition of coating materials includes the following volatile organic compounds:

Methoxypropyl acetate (CAS <sup>o</sup>108-65-6), Bytyl cellosolve (CAS <sup>o</sup>111-76-2), Solvent naphtha heavy aromatic (CAS <sup>o</sup>64742-94-5), Solvent of petroleum light fraction (CAS <sup>o</sup>64742-95-6), Xylene (CAS <sup>o</sup>1330-20-7), Butyl alcohol (CAS <sup>o</sup>71-36-3), a mixture of Santosol esters.

All compounds mentioned above completely evaporate during the painting process, their vapors are fed to the afterburner of the gases where they are burned. The efficiency of cleaning the gas afterburner is 99.8%.

### 3.6 Hazardous substances

There are no hazardous substances listed in the "Candidate List of Substances of Very High Concern SVHC for authorization" in the finished products

### 3.7 Production

The BILDEX Company provides a full range of work on the processing of composite panels. Panel production is under strict quality control. All work is carried out by qualified specialists using special equipment. Milling, engraving, rolling, blanking, perforation and sheet shearing operations of almost any complexity are all performed. Composite panels are made on professional Striebig Standard 6216 Composite equipment.

Composite panels are sheared in strict accordance with the sizes provided by the customer and the specification. Shearing is performed with a high precision device, which provides a smooth surface (cut) and prevents the panel from exfoliation.



### 3.8 Allocations

There are no co-products in production of aluminium composite panels manufactured by BILDEX, so there is no need for co-product allocation.

### 3.9 Packaging

For packaging materials are used chipboards, polyethylene film, PET tapes.  
Finished products are palletized on wooden pallets.

### 3.10 Recycling and waste processing

Part of the production waste is sent for processing to specialized organizations (Packaging polyethylene film, Edge of aluminium tape); part is sent for recycling in production (remains and borders of composite material), part is disposed of by licensed enterprises (Waste of a double-sided thermo scotch tape, Protective and Adhesive films, PET film, chipboards, packing polyethylene). Manufacturing fault of aluminium composite panels is divided into waste aluminium and other components and sent for processing to specialized organizations.

Recycling of waste at BILDEX production site until the state of end-of-waste is not carried out.

### 3.11 Explanatory materials.

More explanatory materials about this Environmental Product Declaration or its content are available at: [www.bildex.ru](http://www.bildex.ru) or on request by e-mail: [info@bildex.ru](mailto:info@bildex.ru)

### 4.1 Declared unit

The declared unit refers to 1 ml BILDEX aluminium composite panels with a thickness of 2 - 4 mm and a weight of 3.83 kg. The average is based on seven BILDEX panel modifications. Conversion factor: 1 kg is equal to 0.26 m<sup>2</sup>.

### 4.2 System boundaries of LCA

Type of EPD: Cradle to gate with options.  
This Life Cycle Assessment takes into consideration the following Life Cycle stages: modules A1 (Raw material supply), A2 (Transport), A3 (Production) and D (Reuse – recovery – Recycling potential).

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	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	X

Description of the system boundary (X = Included in LCA, MND = Module Not Declared).

#### 4.2.1 Raw material supply

The company doesn't carry out extraction and processing of raw materials, doesn't reuse products and materials from the previous production system and doesn't use purchased secondary raw materials for manufacturing products. The company doesn't recuperate energy and doesn't use secondary fuel.



#### 4.2.2 Transportation

Raw materials and other materials used in the manufacturing process are delivered to production plant by trucks. The transportation of raw materials and other materials inside production plant is carried out by diesel and petrol forklifts.

#### 4.2.3 Manufacturing

Panel production begins with paint coating and protective ground coating of the aluminium tapes which are placed on top and bottom layers. The process is carried out in the paint area.

Production is carried out on three production lines.

Rolls of painted aluminium tapes for upper layer, rolls of aluminium tapes with protective ground coating for bottom layer, rolls of adhesion and protective films are installed on the line.

The material for the inner layer melts in the extruder, load to the calendar machine, where a sheet of High pressure polyethylene of the required thickness is formed. The composed core is inserted into between two aluminium sheets with a particular amount of adhesive in order to laminate the panel layers.

#### 4.3 Cut-off criteria

It can be assumed that the processes ignored would each have contributed less than 1 % to the impact categories under review.

#### 4.4 LCA software

SimaPro 8 LCA software produced by PRE SUSTAINABILITY Company, Netherlands was used to calculate the indicators of the impact of declared products on the environment.

#### 4.5 Comparability

EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

#### 4.6 Production plant and period under review

The inventory for LCA study is based on 2017 production figures for Aluminium Composite Panels manufactured by BILDEX in their production plant located in Ivanovo district, Russian Federation.

#### 4.7 Data source and quality

Raw materials, electricity, natural gas and other data collected from BILDEX based on electronic system of accounting of materials and products. In the case of annual values are referred for all products or for the whole company, assumed that they are proportional to the volume of output of declared types of products.

#### 4.8 Geographical scope of coverage.

The geographical scope of this study covering all processes and products is based within the Russian Federation.

#### 4.9 Module D – Recyclability potentials.

Aluminium used in the production of Aluminium Composite panels is a valuable material suitable for recycling. After the completion of the life cycle, 100% of the aluminium panels are recyclable. Aluminium scrap melts and can be reused as recycled material. The coefficient of aluminium collection after the end of the life cycle assumed 98%. The percentage of losses during re-melting is 7%.



### 5.1 Environmental impact for 1m2 of BILDEX Aluminium Composite Panels

#### BILDEX A2 4-05

Parameter	UOM	A1 – A3	D
Abiotic depletion	kg Sb eq	5.63E-05	-3.17E-05
Abiotic depletion (fossil fuels)	MJ	4.47E+03	-3.76E+02
Global warming (GWP100a)	kg CO2 eq	2.79E+02	-4.59E+01
Ozone layer depletion (ODP)	kg CFC —11 eq	2.78E-05	-1.33E-06
Photochemical oxidation	kg C2H4 eq	4.53E-02	-1.73E-02
Acidification	kg SO2 eq	7.43E-01	-2.81E-01
Eutrophication	kg Po4 — eq	1.28E-01	-6.44E-02

#### BILDEX FR 4-05

Parameter	UOM	A1 – A3	D
Abiotic depletion	kg Sb eq	5.77E-05	-3.29E-05
Abiotic depletion (fossil fuels)	MJ	4.46E+03	-3.90E+02
Global warming (GWP100a)	kg CO2 eq	2.81E+02	-4.76E+01
Ozone layer depletion (ODP)	kg CFC —11 eq	2.78E-05	-1.38E-07
Photochemical oxidation	kg C2H4 eq	4.58E-02	-1.80E-03
Acidification	kg SO2 eq	7.52E-01	-2.91E-01
Eutrophication	kg Po4 — eq	1.31E-02	-6.68E-02

#### FRM(0) 2-02

Parameter	UOM	A1 – A3	D
Abiotic depletion	kg Sb eq	4.12E-05	-1.22E-05
Abiotic depletion (fossil fuels)	MJ	3.91E+03	-1.45E+02
Global warming (GWP100a)	kg CO2 eq	2.31E+02	-1.77E+01
Ozone layer depletion (ODP)	kg CFC —11 eq	2.68E-05	-5.10E-07
Photochemical oxidation	kg C2H4 eq	3.15E-02	-6.67E-03
Acidification	kg SO2 eq	5.06E-01	-1.08E-01
Eutrophication	kg Po4 — eq	8.09E-02	-2.48E-02

### 5.1 Environmental impact for 1m2 of BILDEX Aluminium Composite Panels

#### FRM(O) 3-02

Parameter	UOM	A1 – A3	D
Abiotic depletion	kg Sb eq	4.27E-05	-1.22E-05
Abiotic depletion (fossil fuels)	MJ	3.96E+03	-1.45E+02
Global warming (GWP100a)	kg CO2 eq	2.33E+02	-1.76E+01
Ozone layer depletion (ODP)	kg CFC —11 eq	2.69E-05	-5.08E-06
Photochemical oxidation	kg C2H4 eq	3.19E-02	-6.66E-02
Acidification	kg SO2 eq	5.13E-01	-1.08E-01
Eutrophication	kg Po4 — eq	8.17E-01	-2.47E-02

#### FRM(O) 3-03

Parameter	UOM	A1 – A3	D
Abiotic depletion	kg Sb eq	4.70E-05	-1.80E-05
Abiotic depletion (fossil fuels)	MJ	4.05E+03	-2.13E+02
Global warming (GWP100a)	kg CO2 eq	2.44E+02	-2.60E+01
Ozone layer depletion (ODP)	kg CFC —11 eq	2.71E-05	-7.52E-07
Photochemical oxidation	kg C2H4 eq	3.54E-02	-9.81E-03
Acidification	kg SO2 eq	5.73E-01	-1.59E-01
Eutrophication	kg Po4 — eq	9.49E-02	-3.64E-02

#### BILDEX PE 4-04

Parameter	UOM	A1 – A3	D
Abiotic depletion	kg Sb eq	5.51E-05	-2.53E-05
Abiotic depletion (fossil fuels)	MJ	4.21E+03	-3.01E+02
Global warming (GWP100a)	kg CO2 eq	2.61E+02	-3.67E+01
Ozone layer depletion (ODP)	kg CFC —11 eq	2.75E-05	-1.06E-07
Photochemical oxidation	kg C2H4 eq	4.03E-02	-1.38E-03
Acidification	kg SO2 eq	6.57E-01	-2.24E-01
Eutrophication	kg Po4 — eq	1.12E-02	-5.14E-02



### 5.1 Environmental impact for 1m2 of BILDEX Aluminium Composite Panels

BILDEX PE 4-05

Parameter	UOM	A1 – A3	D
Abiotic depletion	kg Sb eq	5.99E-05	-3.18E-05
Abiotic depletion (fossil fuels)	MJ	4.32E+03	-3.77E+02
Global warming (GWP100a)	kg CO2 eq	2.74E+02	-4.59E+01
Ozone layer depletion (ODP)	kg CFC —11 eq	2.78E-05	-1.33E-06
Photochemical oxidation	kg C2H4 eq	4.42E-02	-1.73E-02
Acidification	kg SO2 eq	7.24E-01	-2.81E-01
Eutrophication	kg Po4 — eq	1.27E-01	-6.44E-02

### 5.2 Resource use for 1m2 of BILDEX Aluminium Composite Panels

#### BILDEX A2 4-05

Parameter	UOM	A1 – A3	D
Renewable primary energy as the energy source	(MJ)	0.31	0.00
Renewable primary energy as the use of material	(MJ)	11.68	0.00
Total use of renewable energy resources	(MJ)	11.99	0.00
Non-renewable primary energy as the energy source	(MJ)	4103.06	- 376.00
Non-renewable primary energy as the use of material	(MJ)	364.38	0
Total use of non-renewable primary energy resources	(MJ)	4467.44	-376.00
Use of secondary material	(kg)	0	0
Use of renewable secondary fuel	(MJ)	0	0
Use of non-renewable secondary fuel	(MJ)	0	0
Use of clean potable water	(m3)	0	0

#### BILDEX FR 4-05

Parameter	UOM	A1 – A3	D
Renewable primary energy as the energy source	(MJ)	0.31	0.00
Renewable primary energy as the use of material	(MJ)	11.68	0.00
Total use of renewable energy resources	(MJ)	11.99	0.00
Non-renewable primary energy as the energy source	(MJ)	3550.62	-389.93
Non-renewable primary energy as the use of material	(MJ)	908.15	0
Total use of non-renewable primary energy resources	(MJ)	4458.77	-389.93
Use of secondary material	(kg)	0	0
Use of renewable secondary fuel	(MJ)	0	0
Use of non-renewable secondary fuel	(MJ)	0	0
Use of clean potable water	(m3)	0	0

## 5.2 Resource use for 1m2 of BILDEX Aluminium Composite Panels

### FRM(0) 2-02

Parameter	UOM	A1 – A3	D
Renewable primary energy as the energy source	(MJ)	0.31	0.00
Renewable primary energy as the use of material	(MJ)	11.68	0.00
Total use of renewable energy resources	(MJ)	11.99	0.00
Non-renewable primary energy as the energy source	(MJ)	3550.56	-144.63
Non-renewable primary energy as the use of material	(MJ)	363.11	0
Total use of non-renewable primary energy resources	(MJ)	3913.44	-0.15
Use of secondary material	(kg)	0	0
Use of renewable secondary fuel	(MJ)	0	0
Use of non-renewable secondary fuel	(MJ)	0	0
Use of clean potable water	(m3)	0	0

### FRM(0) 3-02

Parameter	UOM	A1 – A3	D
Renewable primary energy as the energy source	(MJ)	0.31	0.00
Renewable primary energy as the use of material	(MJ)	11.68	0.00
Total use of renewable energy resources	(MJ)	11.99	0.00
Non-renewable primary energy as the energy source	(MJ)	3550.56	-144.47
Non-renewable primary energy as the use of material	(MJ)	412.98	0
Total use of non-renewable primary energy resources	(MJ)	3963.54	-144.47
Use of secondary material	(kg)	0	0
Use of renewable secondary fuel	(MJ)	0	0
Use of non-renewable secondary fuel	(MJ)	0	0
Use of clean potable water	(m3)	0	0



## 5.2 Resource use for 1m2 of BILDEX Aluminium Composite Panels

FRM(0) 3-03

Parameter	UOM	A1 – A3	D
Renewable primary energy as the energy source	(MJ)	0.31	0.00
Renewable primary energy as the use of material	(MJ)	11.68	0.00
Total use of renewable energy resources	(MJ)	11.99	0.00
Non-renewable primary energy as the energy source	(MJ)	3550.56	-213.49
Non-renewable primary energy as the use of material	(MJ)	503.80	0
Total use of non-renewable primary energy resources	(MJ)	4054.36	-213.49
Use of secondary material	(kg)	0	0
Use of renewable secondary fuel	(MJ)	0	0
Use of non-renewable secondary fuel	(MJ)	0	0
Use of clean potable water	(m3)	0	0

BILDEX PE 4-04

Parameter	UOM	A1 – A3	D
Renewable primary energy as the energy source	(MJ)	0.31	0.00
Renewable primary energy as the use of material	(MJ)	11.68	0.00
Total use of renewable energy resources	(MJ)	11.99	0.00
Non-renewable primary energy as the energy source	(MJ)	3550.56	-300.35
Non-renewable primary energy as the use of material	(MJ)	663.97	0
Total use of non-renewable primary energy resources	(MJ)	4214.53	-300.35
Use of secondary material	(kg)	0	0
Use of renewable secondary fuel	(MJ)	0	0
Use of non-renewable secondary fuel	(MJ)	0	0
Use of clean potable water	(m3)	0	0

## 5.2 Resource use for 1m2 of BILDEX Aluminium Composite Panels

### BILDEX PE 4-05

Parameter	UOM	A1 – A3	D
Renewable primary energy as the energy source	(MJ)	0.31	0.00
Renewable primary energy as the use of material	(MJ)	11.68	0.00
Total use of renewable energy resources	(MJ)	11.99	0.00
Non-renewable primary energy as the energy source	(MJ)	3550.56	-376.38
Non-renewable primary energy as the use of material	(MJ)	767.37	0
Total use of non-renewable primary energy resources	(MJ)	4317.93	-376.38
Use of secondary material	(kg)	0	0
Use of renewable secondary fuel	(MJ)	0	0
Use of non-renewable secondary fuel	(MJ)	0	0
Use of clean potable water	(m3)	0	0

## 5.3 Output flows and waste categories for 1m2 of BILDEX Aluminium Composite Panels

### BILDEX A2 4-05

Parameter	UOM	A1 – A3	D
Hazardous waste disposed	(kg)	0	0
Non-hazardous waste disposed	(kg)	0,0599	5,892
Radioactive waste disposed	(kg)	0	0
Components fit for reuse	(kg)	0	0
Materials for recycling	(kg)	0,1377	2,687
Materials for energy recovery	(kg)	0	0
Exported electric energy	(MJ)	0	0
Exported heat energy	(MJ)	0	0

### 5.3 Output flows and waste categories for 1m2 of BILDEX Aluminium Composite Panels

#### BILDEX FR 4-05

Parameter	UOM	A1 – A3	D
Hazardous waste disposed	(kg)	0	0
Non-hazardous waste disposed	(kg)	0,0599	5.483
Radioactive waste disposed	(kg)	0	0
Components fit for reuse	(kg)	0	0
Materials for recycling	(kg)	0,1377	2,787
Materials for energy recovery	(kg)	0	0
Exported electric energy	(MJ)	0	0
Exported heat energy	(MJ)	0	0

#### FRM(0) 2-02

Parameter	UOM	A1 – A3	D
Hazardous waste disposed	(kg)	0	0
Non-hazardous waste disposed	(kg)	0,0599	1,880
Radioactive waste disposed	(kg)	0	0
Components fit for reuse	(kg)	0	0
Materials for recycling	(kg)	0,1377	1,033
Materials for energy recovery	(kg)	0	0
Exported electric energy	(MJ)	0	0
Exported heat energy	(MJ)	0	0

#### FRM(0) 3-02

Parameter	UOM	A1 – A3	D
Hazardous waste disposed	(kg)	0	0
Non-hazardous waste disposed	(kg)	0,0599	2,773
Radioactive waste disposed	(kg)	0	0
Components fit for reuse	(kg)	0	0
Materials for recycling	(kg)	0,1377	1,033
Materials for energy recovery	(kg)	0	0
Exported electric energy	(MJ)	0	0
Exported heat energy	(MJ)	0	0



### 5.3 Output flows and waste categories for 1m2 of BILDEX Aluminium Composite Panels

FRM(O) 3-03

Parameter	UOM	A1 – A3	D
Hazardous waste disposed	(kg)	0	0
Non-hazardous waste disposed	(kg)	0,0599	2.588
Radioactive waste disposed	(kg)	0	0
Components fit for reuse	(kg)	0	0
Materials for recycling	(kg)	0,1377	1,521
Materials for energy recovery	(kg)	0	0
Exported electric energy	(MJ)	0	0
Exported heat energy	(MJ)	0	0

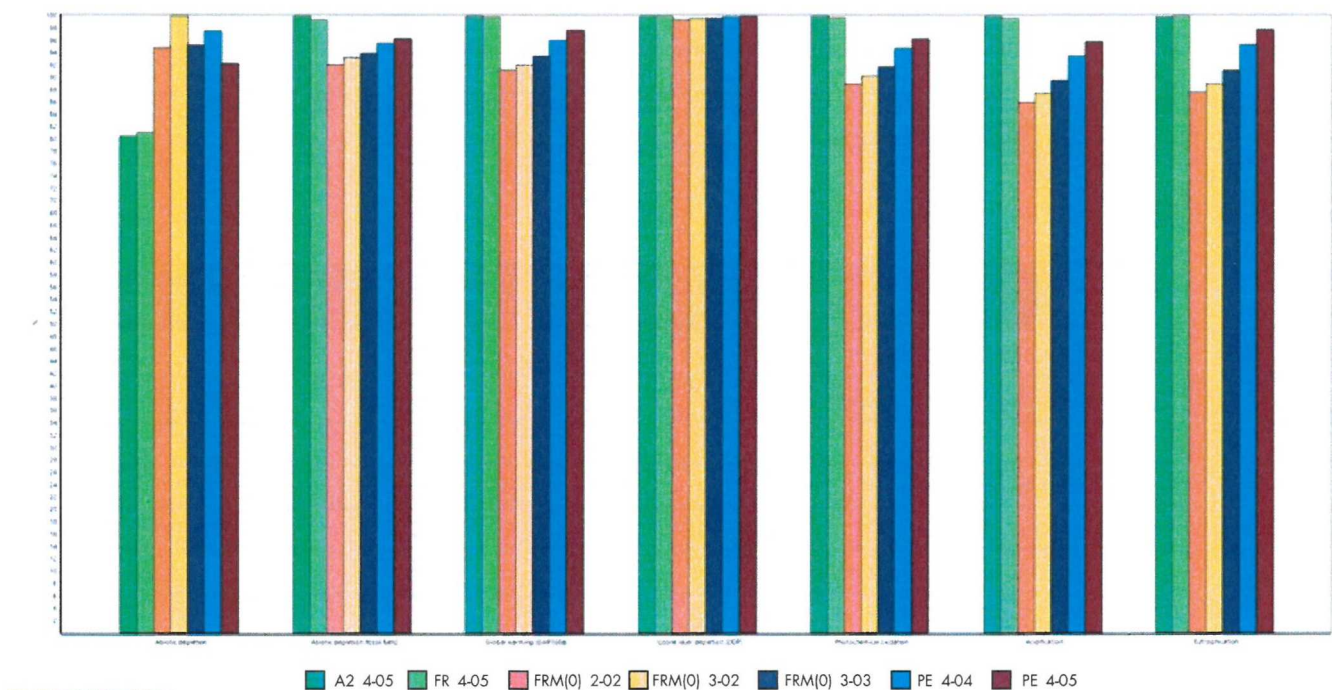
BILDEX PE 4-04

Parameter	UOM	A1 – A3	D
Hazardous waste disposed	(kg)	0	0
Non-hazardous waste disposed	(kg)	0,0599	3,320
Radioactive waste disposed	(kg)	0	0
Components fit for reuse	(kg)	0	0
Materials for recycling	(kg)	0,1377	2,144
Materials for energy recovery	(kg)	0	0
Exported electric energy	(MJ)	0	0
Exported heat energy	(MJ)	0	0

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Parameter	UOM	A1 – A3	D
Hazardous waste disposed	(kg)	0	0
Non-hazardous waste disposed	(kg)	0,0599	3,165
Radioactive waste disposed	(kg)	0	0
Components fit for reuse	(kg)	0	0
Materials for recycling	(kg)	0,1377	2,687
Materials for energy recovery	(kg)	0	0
Exported electric energy	(MJ)	0	0
Exported heat energy	(MJ)	0	0

The following chart shows the LCA results of each ACP type. The individual columns represent the impact categories in the following order: Abiotic depletion; Abiotic depletion (fossil fuels); Global warming (GWP100a); Ozone layer depletion; Photochemical oxidation; Acidification; Eutrophication.



The results are mainly based on the different amounts of materials used in each ACP type.

EN 15804:2012 + A1:2013 Sustainability of construction works, Environmental product declarations, Core rules for the product category of construction products.

ISO 14025:2006: Environmental labels and declarations - Type III environmental declarations — Principles and procedures

ISO 14040:2006, Environmental management - Life cycle assessment – Principles and framework

The International EPD® System - a programme for type III environmental declarations, maintaining a system to verify and register EPD®s as well as keeping a library of EPD®s and PCRs in accordance with ISO 14025, [www.environdec.com](http://www.environdec.com)

PCR Fabricated products made out of metal composite material (MCM) 2015:04, Version 1.0 developed in the framework of the International EPD® System, operating in accordance with ISO 14025:2006.

SimaPro LCA Software, PRe SUSTAINABILITY, The Netherlands, [www.pre-sustainability.com](http://www.pre-sustainability.com)

EN 485-2:2016 Aluminium and aluminium alloys – Sheet, strip and plate – Part 2: Mechanical properties.

EN 485-4:1993 Aluminium and aluminium alloys – Sheet, strip and plate – Part 4: Tolerances on shape and dimensions for cold-rolled products

EN 1396:2015 Aluminium and aluminium alloys – Coil coated sheet and strip for general applications – Specification

Candidate List of Substances of Very High Concern SVHC for authorization,  
[http://echa.europa.eu/chem\\_data/authorisation\\_process/candidate\\_list\\_table\\_en.asp](http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp)







ALUMINUM COMPOSITE PANELS

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