ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025:2010
and EN 15804:2012

ATLAS
THIN-COAT RENDERS BASED ON ORGANIC BINDERS

quality in construction
Building Research Institute

ITB is the member of ECO PLATFORM The European platform for EPD program operators

ENVIRONMENTAL PRODUCT DECLARATION

ATLAS THIN-COAT RENDERS BASED ON ORGANIC BINDERS

Issuance date: 10.03.2014
Validity date: 10.03.2019

EPD PROGRAM OPERATOR
BUILDING RESEARCH INSTITUTE
00-611 Warsaw, ul. Filtrowa 1
www.itb.pl

MANUFACTURER:
ATLAS spółka z o.o.
91-222 Łódź, ul. Św. Teresy 105,
Poland
atlas@atlas.com.pl www.atlas.com.pl

Manufacturing sites information

Zakład Produkcyjny PIOTRKÓW TRYBUNALSKI,
97-300 Piotrków Trybunalski, ul. Wronia 61/63,
Poland

Zakład Produkcyjny BYDGOSZCZ,
85-758 Bydgoszcz, ul. Przemysłowa 32,,
Poland

Zakład Produkcyjny DĄBROWA GÓRNICZA,
41-306 Dąbrowa Górnicza, ul. Roździeńskiego 2,
Poland

Zakład Produkcyjny SUWAŁKI,
16-400 Suwałki, Dubowo II nr 33,
Poland

Wytwórnia Klejów i Zapraw Budowlanych S.A.
95-100 Zgierz, ul. Szczawińska 52A,
Poland

ENVIRONMENTAL PRODUCT DECLARATION

ATLAS
THIN-COAT RENDERS BASED ON ORGANIC BINDERS
in accordance with ISO 14025:2010 and EN 15804:2012

1. BASIC INFORMATION

This declaration is the type III Environmental Product Declaration (EPD) based on EN 15804:2012 and verified according to ISO 14025. It contains information about the impact of declared construction materials on environment and their aspects verified by the independent Advisory Board according to ISO 14025. Basically, a comparison or evaluation of EPD data is possible only if all the compared data were created according to EN 15804:2012 (see point 5.3 of the norm).
Life cycle: A1-A3 modules in accordance with EN 15804 (Cradle to Gate)
The year of preparing the characteristic: 2014
Issuance date: 10.03. 2014
Validation date: 01.03.2014
Validity date: 10.03.2019
Declared durability: 50 years

2. LIFE CYCLE ASSESSMENT (LCA)

Declared unit
The declaration refers to 1 kg.
System limits
The life cycle analysis of the examined products covers A1-A3 modules (Cradle to Gate) in accordance with EN 15804:2012. Its include production, including raw materials extraction and energy provision up to the finished, packed product at the factory gate. Processes whose total contribution to the final result, according to mass looked at, is less than 0.5 % was ignored.
Data collection period
The data for manufacture of the examined products refer to the year 2012. The life cycle assessments were prepared for Poland as reference area.
Data quality
The values determined to calculate the LCA originate from verified Atlas inventory data.
Assumptions and estimates
The impacts of the representative ATLAS products were aggregated using weighted average. Impacts for each product and factory were inventoried and calculated separately.
Databases
The data for the processes come from the following databases: Ecoinvent, EMPA, Ullmann's, Plastic-Europe, ITB-Data, SPC.

3. PRODUCT INFORMATION

This environmental product declaration covers factory manufactured renders with organic binders according to EN 15824:2010, paste-form mixtures of one or more water-based polymer dispersions, possibly combined with silicon- or silicate-based binders, water, mineral aggregate, pigments and additives.

This environmental product declaration is valid for the following renders:
Acrylic render ATLAS CERMIT
Silicate render ATLAS SILKAT
Silicone render ATLAS SILKON
Acrylic render TYNK AKRYLOWY ATLAS
Acrylic render ATLAS DEKO M/DEKO DIM
Silicone-silicate render TYNK SILIKONOWO-SILIKATOWY ATLAS
Silicone render TYNK SILIKONOWY ATLAS
Acrylic-silicone render TYNK AKRYLOWO-SILIKONOWY ATLAS
and for the following key coats:
ATLAS CERPLAST
ATLAS SILKAT ASX
ATLAS SILKON ANX

Renders and key coats must be applied together in accordance with the following table

Layer	Variety No. 1	Variety No. 2	Variety No. 3	Variety No. 4
Key coats	ATLAS CERPLAST	ATLAS SILKAT ASX	ATLAS SILKON ANX	ATLAS CERPLAST or ATLAS SILKON ANX
Finishing coats	ATLAS CERMIT acryl or ATLAS DEKO M/ DEKO DIM or TYNK AKRYLOWY ATLAS	ATLAS SILKAT	ATLAS SILKON or TYNK SILIKONOWY ATLAS	TYNK SILIKONOWO-SILIKATOWY ATLAS or TYNK AKRYLOWO-SILIKONOWY ATLAS

4. PRODUCT DESCRIPTION

ATLAS CERMIT acryl is factory-manufactured thin-coat render, paste form mixtures made of water-based polymer dispersion, water, lime powder, aggregate, pigments and additives. It enables a decorative surface with spotted or rustic texture. For indoor and outdoor applications. Recommend as façade plaster with the application of EPS boards and XPS boards. Recommended for façades exposed to damage and soiling – owing to the high mechanical resistance, it is an ideal render for walls at schools, workshops, stores, backup buildings, situated close to roads, factories.

ATLAS SILKAT is factory-manufactured thin-coat render, paste form mixtures made of water-glass dispersion, water, limestone, lime powder, aggregate, pigments and additives. It enables a decorative surface with spotted or rustic texture. For indoor and outdoor applications. Recommend as façade plaster with the application of EPS boards, XPS boards or mineral wool boards. Recommended for façades requiring free water vapour permeability – due to its very high vapour permeability it is a perfect render for walls of cellular concrete, walls in old buildings, walls of swimming pools, etc.

ATLAS SILKON is factory-manufactured thin-coat render, paste form mixtures made of organosilicon resin, water, aggregate, pigments and additives. It enables a decorative surface with spotted or rustic texture. For indoor and outdoor applications. Recommend as façade plaster with the application of EPS boards, XPS boards or mineral wool boards.

ATLAS DEKO M/DEKO DIM is manufactured on the basis of acrylic resin with the addition of coloured quartz aggregate (DEKO M) or natural aggregate (DEKO DIM). Constitutes light and durable render of increased resistance to washing, cleaning and abrasion – ideal for plinths, fences, resistance walls, columns - it is extremely resistant to damages resulting from atmospheric conditions and washing the surface. Recommended for surfaces exposed to high thermal and operation loads – owing to its high elasticity, perfectly compensates strain resulting from different heat expansion of the layers beneath, caused, e.g., by long exposition to sunlight. For indoor and outdoor applications. Recommend as

façade plaster with the application of EPS boards

TYNK AKRYLOWY ATLAS is factory-manufactured thin-coat render, paste form mixtures made of water-based polymer dispersion, water, limestone, lime powder, aggregate, pigments and additives. It enables a decorative surface with spotted texture. For indoor and outdoor applications. Recommend as façade plaster with the application of EPS boards and XPS boards.

TYNK SILIKONOWY ATLAS is factory-manufactured thin-coat render, paste form mixtures made of organosilicon resin, water, aggregate, pigments and additives. It enables a decorative surface with spotted texture. For indoor and outdoor applications. Recommend as façade plaster with the application of EPS boards, XPS boards or mineral wool boards.

TYNK AKRYLOWO-SILIKONOWY ATLAS is factory-manufactured, paste form mixtures made of water-based polymer dispersion combined with silicone-based binder, water, limestone, lime powder, aggregate, pigments and additives. It enables a decorative surface with spotted texture. For indoor and outdoor applications. Recommend as façade plaster with the application of EPS boards.

TYNK SILIKONOWO-SILIKATOWY is factory-manufactured, paste form mixtures made of silicon resin combined with silicate-based binder, water, limestone, lime powder, aggregate, pigments and additives. It enables a decorative surface with spotted texture. For indoor and outdoor applications. Recommend as façade plaster with the application of EPS boards.

ATLAS CERPLAST is manufactured on the basis of acrylic resin and quartz powder. For indoor and outdoor applications. It is ready-to-use priming mass designed for priming substrates before the application following renders:
ATLAS CERMIT ACRYL
TYNK AKRYLOWY ATLAS
TYNK AKRYLOWO-SILIKONOWY ATLAS
TYNK MOZAIKOWY ATLAS DEKO M/DEKO DIM

ATLAS SILKAT ASX is manufactured on the basis of glass - water and quartz sand. It is ready-to-use priming mass designed for priming substrates before the application ATLAS SILKAT (silicate render).

ATLAS SILKON ANX is manufactured on the basis of organosilicon resin and quartz sand. It is ready-to-use priming mass designed for priming substrates before the application following renders:
ATLAS SILKON
TYNK SILIKONOWO-SILIKATOWY ATLAS
TYNK SILIKONOWY ATLAS

USE
Thin-coat renders can be applied directly on base coat of thermal insulation systems, but they can be applied also on traditional plaster (cementitious and cementitious-lime) and concrete.
The outer layer of the system may be a thin-coat render solely or a thin coat render coated with a façade paint (optionally). Priming is necessary before applying the renders independently of the base type.

FUNCTION
The function of thin-coat textured renders is to protect the external wall against the adverse effects of atmospheric conditions and decorate the façades.
Application of key coats before application of renders have three functions: to make renders application easier, to improve its adhesion to the substrate and to constitutes a chemical barrier between the substrate and the render, limiting their interaction - limits colour penetration from the substrate and occurrence of stains on the surface of the render.

5. PRODUCT TECHNICAL DATA

Acrylic render ATLAS CERMIT

Trade name	ATLAS CERMIT
Description	ready to use paste
Color	655 colours (according to ATLAS RICH COLOUR PALETTE)
Thickness options, up to:	1.5; 2.0 mm
Density	1.9 kg/dm^3
Reaction to fire – class	A2 s1, d0
Water vapour permeability	$15 < V_2 \leq 150$ g/m^{2}d
Water absorption	$0.1 < W_2 \leq 0.5$ kg/m^{2}h^{0,5}
Adhesion	≥ 0.35 MPa
Thermal conductivity coefficient (tabular value)	0.76 W/mK ($\lambda_{10, dry}$)
Coverage	ca. 2.5 – 4.5 kg/m^2 (regulated by particle size)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system EN 15824:2010 as single product

Silicate render ATLAS SILKAT

Trade name	ATLAS SILKAT
Description	ready to use paste
Color	352 colours (according to ATLAS RICH COLOUR PALETTE)
Thickness options, up to:	1.5; 2.0 mm
Density	1.9 kg/dm^3
Coverage	ca. 2.5 – 3.0 kg/m^2 (regulated by particle size)
Reaction to fire – class	A2 s1, d0
Water vapour permeability	$15 < V_2 \leq 150$ g/m^{2}d
Water absorption	$0.1 < W_2 \leq 0.5$ kg/m^{2}h^{0,5}
Adhesion	≥ 0.35 MPa
Thermal conductivity coefficient (tabular value)	0.76 W/mK ($\lambda_{10, dry}$)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system EN 15824:2010 as single product

Silicone render ATLAS SILKON

Trade name	ATLAS SILKON
Description	ready to use paste
Color	655 colours (according to ATLAS RICH COLOUR PALETTE)
Thickness options, up to:	1.5; 2.0 mm
Density	1.9 kg/dm^3
Coverage	ca. 2.5 – 3.0 kg/m^2 (regulated by particle size)
Reaction to fire – class	A2 s1, d0
Water vapour permeability	$15 < V_2 \leq 150$ g/m^{2}d
Water absorption	$0.1 < W_2 \leq 0.5$ kg/m^{2}h^{0,5}
Adhesion	≥ 0.35 MPa
Thermal conductivity coefficient (tabular value)	0.76 W/mK ($\lambda_{10,\,dry}$)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system EN 15824:2010 as single product

Acrylic render TYNK AKRYLOWY ATLAS

Trade name	TYNK AKRYLOWY ATLAS
Description	ready to use paste
Color	400 colours (see the new ATLAS COLOUR PALETTE)
Thickness options, up to:	1.5 mm
Density	1.9 kg/dm^3
Coverage	ca. 2.5 kg/m^2
Reaction to fire – class	A2 s1, d0
Water vapour permeability	$15 < V_2 \leq 150$ g/m^{2}d
Water absorption	$0.1 < W_2 \leq 0.5$ kg/m^{2}h^{0,5}
Adhesion	≥ 0.35 MPa
Thermal conductivity coefficient (tabular value)	0.67 W/mK ($\lambda_{10,\,dry}$)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system EN 15824:2010 as single product

Silicone-silicate render TYNK SILIKONOWO-SILIKATOWY ATLAS

Trade name	TYNK SILIKONOWO-SILIKATOWY ATLAS
Description	ready to use paste
Color	400 colours *) (see the new ATLAS COLOUR PALETTE)
Thickness options, up to:	1.5 mm
Density	1.9 kg/dm^3
Coverage	ca. 2.5 kg/m^2
Reaction to fire – class	A2 s1, d0
Water vapour permeability	$15 < V_2 \leq 150$ g/m^{2}d
Water absorption	$0.1 < W_2 \leq 0.5$ kg/m^{2}h^{0,5}
Adhesion	≥ 0.35 MPa
Thermal conductivity coefficient (tabular value)	0.67 W/mK ($\lambda_{10,\,dry}$)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system EN 15824:2010 as single product

Silicone render TYNK SILIKONOWY ATLAS

Trade name	TYNK SILIKONOWY ATLAS
Description	ready to use paste
Color	400 colours *) (see the new ATLAS COLOUR PALETTE)
Thickness options, up to:	1.5 mm
Density	1.9 kg/dm^3
Coverage	ca. 2.5 kg/m^2
Reaction to fire – class	A2 s1, d0
Water vapour permeability	$15 < V_2 \leq 150$ g/m^{2}d
Water absorption	$0.1 < W_2 \leq 0.5$ kg/m^{2}h^{0,5}
Adhesion	≥ 0.35 MPa
Thermal conductivity coefficient (tabular value)	0.67 W/mK ($\lambda_{10,\,dry}$)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system EN 15824:2010 as single product

Acrylic-silicone render TYNK AKRYLOWO-SILIKONOWY ATLAS

Trade name	TYNK AKRYLOWO-SILIKONOWY ATLAS
Description	ready to use paste
Color	400 colours *) (see the new ATLAS COLOUR PALETTE)
Thickness options, up to:	1.5 mm
Density	1.9 kg/dm^3
Coverage	ca. 2.5 kg/m^2
Reaction to fire – class	A2 s1, d0
Water vapour permeability	$15 < V_2 \leq 150$ g/m^{2}d
Water absorption	$0.1 < W_2 \leq 0.5$ kg/m^{2}h^{0,5}
Adhesion	≥ 0.35 MPa
Thermal conductivity coefficient (tabular value)	0.76 W/mK ($\lambda_{10,\,dry}$)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system EN 15824:2010 as single product

Acrylic decorative mosaic render ATLAS DEKO M / DEKO DIM

Trade name	ATLAS DEKO M/DEKO DIM
Description	ready to use paste
Color	60 colours (see the new ATLAS COLOUR PALETTE)
Thickness options, up to:	1.2; 2.0 mm
Density	1.6 kg/dm^3
Coverage	ca. 3.0 – 5.5 kg/m^2 (regulated by particle size)
Reaction to fire – class • for renders up to 2.0 mm • for renders up to 1.2 mm	 A2 s1, d0 B s1, d0
Water vapour permeability	$15 < V_2 \leq 150$ g/m^{2}d
Water absorption	$0.1 < W_2 \leq 0.5$ kg/m^{2}h^{0,5}
Adhesion	≥ 0.35 MPa
Thermal conductivity coefficient (tabular value)	0.76 W/mK ($\lambda_{10,\,dry}$)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system EN 15824:2010 as single product

Priming mass Atlas CERPLAST

Trade name	ATLAS CERPLAST
Description	ready-to-use liquid
Color	white (additionally available in three colours (clinker, brown and graphite)
Density	1.5 kg/dm^3
Adhesion to concrete	> 1.0 MPa
Drying time	4 - 6 h
Consumption	0.3 kg/m^2
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system

Priming mass Atlas SILKAT ASX

Trade name	ATLAS SILKAT ASX
Description	ready-to-use liquid
Color	white
Density	1.5 kg/dm^3
Adhesion to concrete	> 1.0 MPa
Drying time	4 - 6 h
Coverage	0.3 kg/m^2
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system

Priming mass Atlas SILKON ANX

Trade name	ATLAS SILKON ANX
Description	ready-to-use liquid
Color	white
Density	1.5 kg/dm^3
Adhesion to concrete	> 1.0 MPa
Drying time	4 - 6 h
Coverage	0.3 kg/m^2
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system

Placing on the market

For the placing on the market in the European Union the Regulation (EU) No 305/2011 applies. Renders need a Declaration of Performance taking into consideration the harmonized product standard EN 15824:2010.

6. PRODUCT MANUFACTURE

Raw materials and energy

Table 1. Raw materials used to produce ATLAS acrylic renders

No	Name of semi-finished product or raw material	total used in production [Mg]	used on product [%/kg]	used on product [kg/m^2]
1	raw materials	1355	58.739	1.9384
2	additives	558.9	24.228	0.7995
3	rest components (< 0,5%)	52.5	2.276	0.075
4	pallet	125.3	5.432	0.1793
5	PE foil st	6.1	0.264	0.0088
6	PE foil	0.7	0.030	0.001
7	carton spacer	3.5	0.152	0.005
8	bucket	82.1	3.559	0.1174
9	water	122.7	5.319	0.1755

Table 2. Raw materials used to produce ATLAS silicate renders

No	Name of semi-finished product or raw material	total used in production [Mg]	used on product [%/kg]	used on product [kg/m^2]
1	raw materials	263	62.470	2.063
2	additives	84.7	20.119	0.663
3	rest components (< 0,5%)	11.8	2.803	0.092
4	pallet	21.9	5.202	0.172
5	PE foil st	1.1	0.261	0.008
6	PE foil	0.1	0.024	0.001
7	carton spacer	0.6	0.143	0.005
8	bucket	14.4	3.420	0.113
9	water	23.4	5.558	0.183

Table 3. Raw materials used to produce ATLAS silicone renders

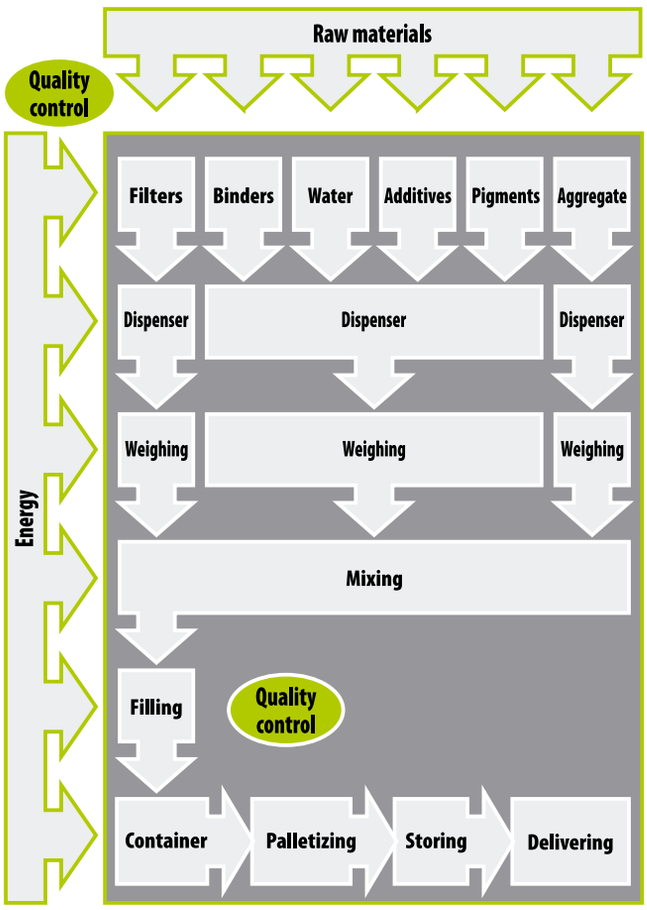
No	Name of semi-finished product or raw material	total used in production [Mg]	used on product [%/kg]	used on product [kg/m^2]
1	raw materials	458.4	77.485	2.2667
2	additives	127.2	21.501	0.6293
3	rest components (< 0,5%)	6	1.0142	0.0299
4	pallet	28	4.733	0.1382
5	PE foil st	1.4	0.237	0.0068
6	PE foil	0.2	0.034	0.0008
7	carton spacer	0.8	0.135	0.0039
8	bucket	18.3	3.093	0.0906

Table 4. Raw materials used to produce ATLAS mix renders

No	Name of semi-finished product or raw material	total used in production [Mg]	used on product [%/kg]	used on product [kg/m²]
1	raw materials	15.98	69.448	2.2943
2	additives	2.3	9.996	0.3294
3	rest components (each < 0,5%)	0.44	1.912	0.0624
4	pallet	0.98	4.259	0.1404
5	PE foil st	0.05	0.217	0.0069
6	PE foil	0.01	0.043	0.0008
7	carton spacer	0.03	0.130	0.0039
8	bucket	0.64	2.781	0.092
9	water	2.58	11.213	0.3699

The figure below shows working process during the production of ready-to-use renders. The raw materials are stored in the production factory in silos, big bags, or sacks accordingly. They are dosed and intensely mixed according to the applicable formulation. Next, the products are filled into containers and send to quality control. After then they are temporarily stored or delivered directly to the site as ready-to-use products.

Figure no. 1. Production process – ready-to-use renders



Quality assurance

Integrated Management System consists of three complementary subsystems:

- the quality management ISO 9001:2008 (since 1999);
- environmental management ISO 14001:2004 + Cor 1:2009 (since 2008);
- the management of occupational health and safety BS OHSAS 18001:2007 (since 2009)

Packaging

Renders are packed in buckets made of Polypropylene (25 kg), key coats are packaged in buckets made of Polypropylene (15 kg). These products must be transported and stored in tightly sealed buckets, in dry conditions and positive temperatures (most preferably on pallets). Shelf life in conditions as specified is 12 months from the production date shown on the packaging.

7. PRODUCT APPLICATION

Key coat application

The products are delivered as the ready to use mix. It must not be mixed with other materials,
diluted, or thickened. The whole content of the container should be mix directly before application to equalize the consistency. Apply the priming mass onto the prepared substrate (evenly over the whole surface) using a roller or a brush. Rendering of the surface can commence after the mass has completely dried i.e. after 4 - 6 hours after its application.

Render application

Regardless of the type of the thin-layer ATLAS render to be used, it should be preceded by a coat of an appropriate render primer, suitable for the type of rendering selected. The renders are delivered as the ready to use mix. It must not be mixed with other materials, diluted, or thickened. The whole content of the container should be mix directly before application to equalize the consistency. Apply the render in a layer equal to the aggregate grain size, with a stainless steel float. Remove the excess of the material, place it in the bucket and remix. The freshly applied coat requires texture forming with a float made of plastic. The spotted effect (N renders) is obtained by floating the plaster with circular movements, while the rustic texture (R renders) - by floating with circular, horizontal, or vertical movements, depending on the required direction of scores. The exception is decorative mosaic render ATLAS DEKO M/DEKO DIM that does not require floating, only float the surface always in the same direction at the same time. The setting time, depending on the surface, the temperature and the relative humidity of the air, is from 12 to 48 hours.

Occupational safety and environmental protection

Occupational safety and environmental protection are described in Material Safety Data Sheets (MSDS) for each product.

Note

Specific information on application and other actions with these products are described in detail in the technical data sheet available on the producer website **www.atlas.com.pl**.

8. EMISSIONS (LCI) AND THEIR IMPACT ON THE ENVIRONMENT

The following chapter show the life cycle inventory analysis of the adhesives with regard to primary energy needs, water needs, emissions into air and waste.

Table 5. Primary energy consumption for A3 module

Energy resource	Unit	total in production [unit]	used on product [unit/Mg]	used on product [unit/m²]
electricity	kWh	4359798	23.26	0.08
black coal	Mg	—	—	—
lignite coal	Mg	—	—	—
coke	Mg	—	—	—
ON	litrs	133222	0.71	0.0023
benzin 95/98	litrs	—	—	—
oil	litrs	—	—	—
natural gas	m³	1015218	5.42	0.02
gas highly nitrogened	m³	—	—	—
LPG	litrs	—	—	—

Table 6. Emissions into air generated during production stage A3

Air emission	Unit	total in production [Mg]	used on product [kg/Mg]	used on product [kg/m²]
Dust	kg	10915.06	0.0200	0.0001
CO	kg	5058.37	0.0089	0.00003
CO_2	kg	1118904.70	1.1000	0.0036
NO_2	kg	2925.38	0.0065	0.00002
SO_2	kg	453.42	1.00E-02	1.30E-04
NH_3	kg	0.49	6.56E-07	2.13E-09
HCl	kg	9.27	1.24E-05	4.02E-08
CH_4	kg	26.28	3.51E-05	1.14E-07

Table 7. Emissions into water generated during production stage A3

Water and sewage	Unit	Total amount
Water	m³	24794
Industrial sewage	m³	6158
Municipal sewage:	m³	5131
Municipal sewage water emissions		
BOD	mg/l	28
COD	mg/l	77
pH	°-	7.7
Suspended matter	mg/l	32
Nitrogen amonian	mg/l	0.64
Phosphorans	mg/l	0.9
Industrial sewage water emissions		
BOD	mg/l	200
COD	mg/l	350
pH	°-	8
Suspended matter	mg/l	100

Table 8. Waste generated in the stage of product manufacturing A3

Waste code	Unit	total in production [Mg]	used on product [kg/Mg]	used on product [kg/m²]
150101	Mg	91.755	0.490	0.00162
150102	Mg	53.753	0.287	0.00095
101382	Mg	1149.9	6.135	0.02024
130208	Mg	0.8	0.004	1.41E-05
150110	Mg	0.109	0.001	1.92E-06
150202	Mg	1.678	0.009	2.95E-05
150203	Mg	2	0.011	3.52E-05
160107	Mg	0.12	0.001	2.11E-06
170405	Mg	6.272	0.033	1.10E-04
80112	Mg	1.361	0.007	2.40E-05
130307	Mg	0.083	0.0004	1.46E-06
150105	Mg	61.36	0.327	1.08E-03
160214	Mg	0.014	0.0001	2.46E-07
160216	Mg	0.79	0.004	1.39E-05
160304	Mg	37.567	0.200	6.61E-04
160605	Mg	0.0026	0.00001	4.58E-08
170107	Mg	319.824	1.706	0.00563
150103	Mg	90.36	0.482	0.00159

9. ENVIRONMENTAL CHARACTERISTICS (LCA)

The results of the LCA with the indicators as per EPD requirement are given in the following tables for product manufacture (A1, A2, A3 modules).

Table 9. Environmental characteristic for 1 kg acrylic render

Environmental assessment information (MND – Module not declared, MD – Module Declared)																
Product stage			Construction process		Use stage							End of life				Benefits and loads beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport to construction site	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction 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
MD	MD	MD	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

Environmental impacts (for 1 kg).					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Global warming potential	[kg CO_2 eq.]	0.93	0.007	0.03	0.96
Depletion potential of the stratospheric ozone layer	[kg CFC 11 eq.]	1.05E-07	4.69E-08	3.14E-10	1.53E-07
Acidification potential of soil and water	[kg SO_2 eq.]	0.00445	0.00002	0.00004	0.0045
Eutrophication potential	[kg $(PO_4)^{3-}$ eq.]	0.00033	0.00006	0.00001	0.0004
Formation potential of tropospheric ozone	[kg Ethene eq.]	0.00029	0.00	0.00	0.0003
Abiotic depletion potential (ADP-elements) for non-fossil resources	[kg Sb eq.]	0.011	0.00	0.00	0.011
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	[MJ]	4.3	0.09360	0.4	4.8
Environmental aspects on resource use (for 1 kg).					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	0.11	0.00	0.02	0.13
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	5.17	0.10	0.44	5.71
Use of secondary material	[kg]	0.00	0.00	0.00	0.00
Use of renewable secondary fuels	[MJ]	0.09	0.00	0.00	0.09
Use of non-renewable secondary fuels	[MJ]	0.15	0.00	0.00	0.15
Net use of fresh water	[dm^3]	0.11	0.001	0.01	0.12
Other environmental information describing waste categories (for 1 kg).					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Hazardous waste disposed	[kg]	0.0001	0.00	0.00	0.0001
Non-hazardous waste disposed	[kg]	0.0100	0.0005	0.0090	0.0195
Radioactive waste disposed	[kg]	0.00	0.00	0.00	0.00
Components for re-use	[kg]	0.00	0.00	0.0050	0.0050
Materials for recycling	[kg]	0.0082	0.00	0.0009	0.0091
Materials for energy recovery	[kg]	0.00	0.00	0.00	0.00
Exported energy	[MJ]	0.00	0.00	0.00	0.00

Table 10. Environmental characteristic for 1 kg silicone render

Environmental assessment information (MND – Module not declared, MD – Module Declared)																
Product stage			Construction process		Use stage							End of life				Benefits and loads beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport to construction site	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction 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
MD	MD	MD	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

Environmental impacts (for 1 kg).					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Global warming potential	[kg CO_2 eq.]	0.690	0.004	0.03	0.72
Depletion potential of the stratospheric ozone layer	[kg CFC 11 eq.]	1.16E-07	2.72E-08	3.14E-10	1.44E-07
Acidification potential of soil and water	[kg SO_2 eq.]	0.00358	0.00001	0.00004	0.0036
Eutrophication potential	[kg $(PO_4)^{3-}$ eq.]	0.00056	0.00003	0.00001	0.0006
Formation potential of tropospheric ozone	[kg Ethene eq.]	0.00023	0.00	0.00	0.0002
Abiotic depletion potential (ADP-elements) for non-fossil resources	[kg Sb eq.]	0.00956	0.00	0.00	0.00956
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	[MJ]	3.2	0.1	0.4	3.6
Environmental aspects on resource use (for 1 kg).					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	0.07	0.00	0.02	0.10
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	3.81	0.06	0.44	4.31
Use of secondary material	[kg]	0.00	0.00	0.00	0.00
Use of renewable secondary fuels	[MJ]	0.09	0.00	0.00	0.09
Use of non-renewable secondary fuels	[MJ]	0.14	0.00	0.00	0.14
Net use of fresh water	[dm^3]	0.10	0.0005	0.05	0.15
Other environmental information describing waste categories (for 1 kg).					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Hazardous waste disposed	[kg]	0.0001	0.0000	0.0000	0.0001
Non-hazardous waste disposed	[kg]	0.0100	0.0004	0.0091	0.0195
Radioactive waste disposed	[kg]	0.0000	0.0000	0.0000	0.0000
Components for re-use	[kg]	0.0000	0.0000	0.0049	0.0049
Materials for recycling	[kg]	0.0078	0.0000	0.0009	0.0087
Materials for energy recovery	[kg]	0.0000	0.0000	0.0000	0.0000
Exported energy	[MJ]	0.0000	0.0000	0.0000	0.0000

Table 11. Environmental characteristic for 1 kg silicate render

Environmental assessment information (MND – Module not declared, MD – Module Declared)																
Product stage			Construction process		Use stage							End of life				Benefits and loads beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport to construction site	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction 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
MD	MD	MD	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

Environmental impacts (for 1 kg).					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Global warming potential	[kg CO_2 eq.]	0.59	0.006	0.026	0.60
Depletion potential of the stratospheric ozone layer	[kg CFC 11 eq.]	9.05E-08	3.88E-08	3.14E-10	1.29E-07
Acidification potential of soil and water	[kg SO_2 eq.]	0.00198	0.00001	0.00004	0.0020
Eutrophication potential	[kg $(PO_4)^{3-}$ eq.]	0.00018	0.00005	0.00001	0.0002
Formation potential of tropospheric ozone	[kg Ethene eq.]	0.00013	0.00	0.00000	0.0001
Abiotic depletion potential (ADP-elements) for non-fossil resources	[kg Sb eq.]	0.00701	0.00	0.00000	0.00701
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	[MJ]	2.7	0.07800	0.4	2.8
Environmental aspects on resource use (for 1 kg).					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	0.09	0.00	0.02	0.11
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	2.13	0.09	0.44	2.66
Use of secondary material	[kg]	0.00	0.00	0.00	0.00
Use of renewable secondary fuels	[MJ]	0.10	0.00	0.00	0.10
Use of non-renewable secondary fuels	[MJ]	0.14	0.00	0.00	0.14
Net use of fresh water	[dm^3]	0.10	0.001	0.05	0.15
Other environmental information describing waste categories (for 1 kg).					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Hazardous waste disposed	[kg]	0.0001	0.0000	0.0000	0.0001
Non-hazardous waste disposed	[kg]	0.0100	0.0004	0.0091	0.0195
Radioactive waste disposed	[kg]	0.0000	0.0000	0.0000	0.0000
Components for re-use	[kg]	0.0000	0.0000	0.0049	0.0049
Materials for recycling	[kg]	0.0082	0.0000	0.0009	0.0091
Materials for energy recovery	[kg]	0.0000	0.0000	0.0000	0.0000
Exported energy	[MJ]	0.0000	0.0000	0.0000	0.0000

Table 12. Environmental characteristic for 1 kg mix sil-sil render

Environmental assessment information (MND – Module not declared, MD – Module Declared)																
Product stage			Construction process		Use stage							End of life				Benefits and loads beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport to construction site	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction 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
MD	MD	MD	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

Environmental impacts (for 1 kg).					
Indicator	Unit	A1	A2	A3	A1-A3
Global warming potential	[kg CO_2 eq.]	0.64	0.005	0.03	0.67
Depletion potential of the stratospheric ozone layer	[kg CFC 11 eq.]	1.03E-07	0.00	0.00	1.36E-07
Acidification potential of soil and water	[kg SO_2 eq.]	0.003	0.00	0.00	0.0028
Eutrophication potential	[kg $(PO_4)^{3-}$ eq.]	0.0004	0.00	0.00	0.0004
Formation potential of tropospheric ozone	[kg Ethene eq.]	0.00018	0.00	0.00	0.0002
Abiotic depletion potential (ADP-elements) for non-fossil resources	[kg Sb eq.]	0.0082	0.00	0.00	0.00824
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	[MJ]	2.9	0.066	0.40	3.4
Environmental aspects on resource use (for 1 kg).					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	0.08	0.00	0.02	0.10
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	2.96	0.07	0.44	3.47
Use of secondary material	[kg]	0.00	0.00	0.00	0.00
Use of renewable secondary fuels	[MJ]	0.09	0.00	0.00	0.09
Use of non-renewable secondary fuels	[MJ]	0.14	0.00	0.00	0.14
Net use of fresh water	[dm^3]	0.10	0.00	0.05	0.15
Other environmental information describing waste categories (for 1 kg).					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Hazardous waste disposed	[kg]	0.0001	0.0000	0.0000	0.0001
Non-hazardous waste disposed	[kg]	0.0100	0.0004	0.0091	0.0195
Radioactive waste disposed	[kg]	0.0000	0.0000	0.0000	0.0000
Components for re-use	[kg]	0.0000	0.0000	0.0049	0.0049
Materials for recycling	[kg]	0.0082	0.0000	0.0009	0.0091
Materials for energy recovery	[kg]	0.0000	0.0000	0.0000	0.0000
Exported energy	[MJ]	0.0000	0.0000	0.0000	0.0000

VERIFICATION

The process of verification of an EPD is in accordance with ISO 14025, clause 8 and ISO 21930, clause 9. After verification, this EPD is valid for a 5-year-period. EPD does not have to be recalculated after 5 years, if the underlying data have not changed significantly.

The basis for LCA analysis was EN 15804

Independent verification corresponding to ISO 14025 & 8.3.1.

☑ external ☐ internal

Verification of EPD: dr eng. Aleksander Panek
LCI audit and input data verification: msc eng. Dominik Bekierski
LCA: dr eng. Michał Piasecki
Verification of procedures and declaration: dr eng. Halina Prejzner

NORMATIVE REFERENCES

- ISO 14025:2006, Environmental management – Type III environmental declarations – Principles and procedure.
- ISO 21930:2007, Sustainability in building and construction – Environmental declaration of building products.
- ISO 14044:2006, Environmental management – Life cycle assessment – Requirements and guidelines.
- ISO 15686-1:2000, Buildings and constructed assets – Service life planning – Part 1: General principles
- ISO 15686-8:2008, Buildings and constructed assets – Service life planning – Part 8: Reference service life
- EN 15804:2012, Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products.
- EN 15942:2011, Sustainability of construction works – Environmental product declarations – Communication format business-to-business

Instytut Techniki Budowlanej

Zakład Fizyki Cieplnej, Instalacji Sanitarnych i Środowiska

02-656 Warszawa, ul. Ksawerów 21

ŚWIADECTWO nr 015/2014
DEKLARACJI ŚRODOWISKOWEJ III TYPU

Wyroby:

Dyspersyjne zaprawy tynkarskie z podkładami ATLAS:
SILKAT ASX, SILKON ANX, CERMIT acryl, SILKAT, SILKON,
tynk AKRYLOWY, tynk AKRYLOWO-SILIKONOWY, tynk SILIKONOWY,
tynk SILIKONOWO-SILIKATOWY, DEKO M/DIM

Wnioskodawca:

ATLAS Sp. z o.o.

91-222 Łódź, ul. Św. Teresy 105

potwierdza się poprawność ustalenia danych uwzględnionych przy opracowaniu Deklaracji Środowiskowej III typu oraz zgodność z wymaganiami normy

PN-EN 15804:2012

Zrównoważoność obiektów budowlanych.
Deklaracje środowiskowe wyrobów.
Podstawowe zasady kategoryzacji wyrobów budowlanych.

Niniejsze świadectwo, wydane po raz pierwszy 10 marca 2014 r. jest ważne 5 lat,
lub do czasu zmiany wymienionej Deklaracji Środowiskowej

Kierownik
Zakładu Fizyki Cieplnej,
Instalacji Sanitarnych i Środowiska
Robert Geryło

INSTYTUT TECHNIKI BUDOWLANEJ

Dyrektor
Instytutu Techniki Budowlanej
Jan Bobrowicz

Warszawa, marzec 2014 r.


ATLAS