



# ENVIRONMENTAL PRODUCT DECLARATION

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

**ATLAS  
PRIMERS AND FACADE PAINTS**



 <sup>®</sup> quality in construction  
**Building Research Institute**



ITB is the member of **PLATFORM** <sup>★ ★ ★ ★ ★</sup> The European platform for EPD program operators





## **ENVIRONMENTAL PRODUCT DECLARATION**

### **ATLAS PRIMERS AND FACADE PAINTS**

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](http://www.itb.pl)

#### **MANUFACTURER:**

ATLAS spółka z o.o.

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Poland

[atlas@atlas.com.pl](mailto:atlas@atlas.com.pl) [www.atlas.com.pl](http://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



## 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) and the building context.

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. (calculated by the density of the final product - see section 5)

### System limits

The life cycle analysis of the examined products covers A1-A3 modules (Cradle to Gate) in accordance with EN 15804:2012. It includes 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 is valid for the following facade paints:

Acrylic facade paint ATLAS ARKOL E

Silicate facade paint ATLAS ARKOL S

Silicone facade paint ATLAS ARKOL N

Silicone - modified facade paint ATLAS FASTEL NOVA

and the following primers:

Atlas ARKOL SX (for silicate paints)

Atlas ARKOL NX (for silicone paints)

## 4. PRODUCT DESCRIPTION

**ATLAS ARKOL E** is acrylic facade paint manufactured on the basis of acrylic dispersion, fillers, water, pigments and additives. Recommended for surfaces exposed to pollution and high functional load – due to high abrasion resistance and low absorptiveness, it is perfect for places exposed to these factors: on facades of schools, shops, sport facilities, buildings situated along communication routes, for staircases, corridors, etc.

**ATLAS ARKOL S** is silicate facade paint manufactured on the basis of sodium water glass, fillers, water, pigments and additives. Due to their chemical composition, ATLAS ARKOL S is the most related to mineral substrates and therefore are particularly recommended for painting of this kind of surfaces. Owing to chemical bonding with the components of mineral renders, they adhere to them perfectly. Moreover, they penetrate deep into the pores of a mineral substrate, perfectly reflecting the texture of the painted surface. ARKOL S paints are resistant to the aggressive components of mineral renders. This feature enables painting such renders even before their carbonization period has finished, without the risk of discolorations.

**ATLAS ARKOL N** is silicone-modified facade paint manufactured on the basis of organosilicone dispersion, fillers, water, pigments and additives. Recommended for painting surfaces particularly exposed to precipitation and pollution – hydrophobic – has very low absorbability, therefore protecting (e.g. The wall or the roof tiles) against excessive soaking and pollution penetration. Due to this characteristic they form a self-cleaning surface – dirt and dust do not penetrate the structure of the paint and are washed by rainfall. Exceptionally low absorbability changes the painted substrate into an environment much less susceptible to microbiological contamination. Water stops on the surface painted with a silicone paint and does not penetrate into the wall, leaving it dry.

**ATLAS FASTEL NOVA** paint is manufactured on the basis of specially - selected polymer dispersion modified, fillers, water, pigments and additives. Creates surface resistant to adhesion of pollution – the paint surface is extremely consistent, microscopically smooth, due to which particles of dirt, algae and fungi spores easily lose contact with the wall and are naturally removed by rain and wind. It does not need primer - the first paint layer primes the substrate. ATLAS FASTEL NOVA is recommended for fresh renders – enables painting thin-coat mineral renders after 5 days of their application.

**ATLAS ARKOL SX** is silicate primer manufactured on the basis of potassium water glass, water and additives. Primes substrates for silicate paints – e.g. ATLAS ARKOL S – allows retaining the unique properties of the paint concerning binding with the substrate, vapour permeability, etc. Types of painted substrates – cement plasters, cement-lime plasters, thin-coat mineral renders, rough walls of concrete, bricks, blocks and ceramic or silicate hollow bricks.

**ATLAS ARKOL NX** is silicone primer manufactured on the basis of organosilicone dispersion, water and additives. Recommended for priming substrates for silicone paints – e.g. ATLAS ARKOL N, FASTEL NOVA – allows retaining the unique properties of the paint concerning binding with the substrate, vapour permeability, etc.

### USE

Facade paints and primers are designed for making coatings on any mineral substrates - concrete, traditional plasters on walls of bricks, blocks, or ceramic, cellular concrete or silicate hollow bricks. They are also recommended to use as outer layer of thermal insulation systems with EPS-boards, XPS-boards and mineral wool boards.

### FUNCTION

Facade paints are decorative and protective function.

Priming has two purposes - first of all to reduce and equalize the absorption of subsequently applied finishing layer and secondly to impregnate and strengthen substrate in depth - the end result is to ensure strong links between the substrate and finish coat.

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## 5. PRODUCT TECHNICAL DATA

Acrylic facade paint Atlas ARKOL E

Trade name	ATLAS ARKOL E
Description	ready-to-use liquid
Components	acryl-copolymer binder, pigments, additives
Color	695 colours
Density	1.45 kg/dm <sup>3</sup>
Coverage	0.125-0.250 dm <sup>3</sup> /m <sup>2</sup>
Volatile organic compounds (VOC)	12.3 g/l (maximum allowable VOC content is 40 g/l)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system

Silicate facade paint Atlas ARKOL S

Trade name	ATLAS ARKOL S
Description	ready-to-use liquid
Components	silicate binder, pigments, additives
Color	352 colours
Density	1.5 kg/dm <sup>3</sup>
Coverage	0.25-0.28 dm <sup>3</sup> /m <sup>2</sup>
Volatile organic compounds (VOC)	22.29 g/l (maximum allowable VOC content is 40 g/l)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system

Silicone facade paint Atlas ARKOL N

Trade name	ATLAS ARKOL N
Description	ready-to-use liquid
Components	silicone resin, pigments, additives
Color	695 colours
Density	1.45 kg/dm <sup>3</sup>
Coverage	0.125-0.250 dm <sup>3</sup> /m <sup>2</sup>
Volatile organic compounds (VOC)	35.72 g/l (maximum allowable VOC content is 40 g/l)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system

Silicone - modified facade paint Atlas FASTEL-NOVA

Trade name	ATLAS FASTEL NOVA
Description	ready-to-use liquid
Components	silicone resin, pigments, additives
Color	695 colours
Density	1.4 kg/dm <sup>3</sup>
Coverage	0.125-0.250 dm <sup>3</sup> /m <sup>2</sup>
Volatile organic compounds (VOC)	≤ 39.9 g/l (maximum allowable VOC content is 40 g/l)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system

Atlas ARKOL SX (primer for silicate paints)

Trade name	ATLAS ARKOL SX
Description	ready-to-use liquid
Components	water, styroacrylat binder, mineral fillers, silicone emulsion, additives
Color	white
Density	1.5 kg/dm <sup>3</sup>
Coverage	0.05-0.20 kg/m <sup>2</sup>
Volatile organic compounds (VOC)	7.39 g/l (maximum allowable VOC content is 30 g/l)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system

Atlas ARKOL NX (primer for silicone paints)

Trade name	ATLAS ARKOL NX
Description	ready-to-use liquid
Components	water, styroacrylat binder, mineral fillers, silicone emulsion, additives
Color	white
Density	1.5 kg/dm <sup>3</sup>
Coverage	0.05-0.20 kg/m <sup>2</sup>
Volatile organic compounds (VOC)	19.93 g/l (maximum allowable VOC content is 30 g/l)
Dangerous substance	see MSDS
Technical requirements	AT-15-9090/2014 as element of thermal insulation system

# ENVIRONMENTAL PRODUCT DECLARATION

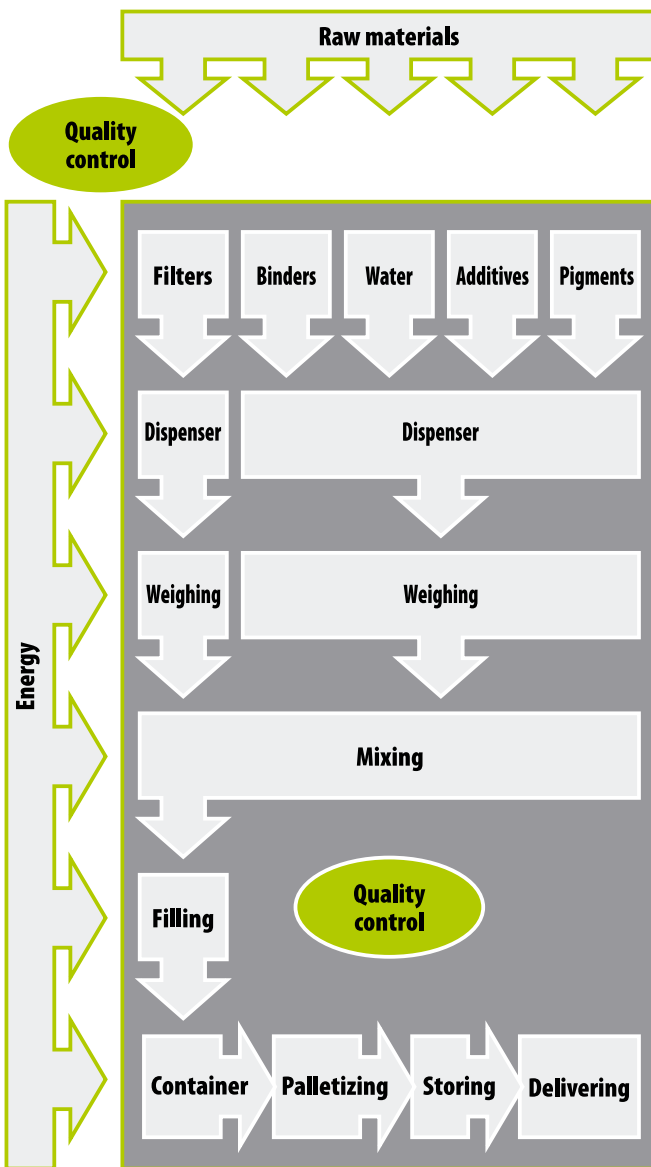
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## 6. PRODUCT MANUFACTURE

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

Figure 1.  
Production process – paints and primers (scheme)



### 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)

Table 1. Raw materials used to produce Atlas paints and primers

No	Name of semi-finished product or raw material	total used in production [Mg]	used on product [%/kg]	used on product [kg/m <sup>2</sup> ]
1	raw materials	537.7	40.076	0.1829
2	additives	389	28.993	0.1056
3	rest components (each < 0.5 %)	16.5	1.230	0.0073
4	pallet	42.6	3.175	0.0106
5	PE foil st	4.5	0.335	0.0003
6	PE foil	18.2	1.356	0.0003
8	carton spacer	2.4	0.1789	0.0035
11	bucket	36.2	2.698	0.0292
12	water	294.6	21.957	0.0914

### Packaging

Facade paints are packaged in buckets made of Polypropylene (10 l), primers are packaged in containers made of Polypropylene (5 kg). These products must be transported and stored in tightly sealed containers, 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

### Primers application

The substrate should be dry, stable, even and structurally sound i.e. strong enough and free from layers that may weaken paint adhesion, in particular dust, dirt, wax and grease. The primers are delivered in the ready to use form. It must not be diluted or mixed with other materials. Apply the primer on the substrate with a roller or a brush, in thin and even layer. The second layer can be applied after minimum 4 hours of the first priming. The drying time of primers depends on the substrate, temperature and relative air humidity and is about 30 min. The substrate must be primed 4-6 hours before painting.

### Paints application

The substrate must be primed (except ATLAS FASTEL-NOVA that does not need primer). Paint should be apply in the form of a thin and even layer, not earlier than after 4-6 hours from priming the substrate. The painting can be done with a roller, a brush, or by spraying. Paints should be apply continuously (using the "wet on wet" method), avoiding breaks in work. The drying time depends on the substrate, the temperature and the relative air humidity and is from ca. 2 to 6 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](http://www.atlas.com.pl).

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## 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 2.** Primary energy consumption for A3 module

Energy resource	Unit	total in production [unit]	used on product [unit/Mg]	used on product [unit/m <sup>2</sup> ]
electricity	kWh	4359798	23.26	0.08
black coal	Mg	—	—	—
lignite coal	Mg	—	—	—
coke	Mg	—	—	—
ON	litrs	133222	0.71	0.002
benzin 95/98	litrs	—	—	—
oil	litrs	—	—	—
natural gas	m <sup>3</sup>	1015218	5.42	0.02
gas highly nitrogened	m <sup>3</sup>	—	—	—
LPG	litrs	—	—	—

**Table 3.** Emissions into air generated during production stage A3

Air emission	Unit	total in production [Mg]	used on product [kg/Mg]	used on product [kg/m <sup>2</sup> ]
Dust	kg	852.48	0.0045	1.5E-05
CO	kg	836.92	0.0045	1.5E-05
CO <sub>2</sub> <sup>1</sup>	kg	193852.00	1.1	0.0036
NO <sub>2</sub>	kg	1365.87	0.0073	2.40E-05
SO <sub>2</sub>	kg	406.45	1.00E-02	3.30E-05
CH <sub>4</sub>	kg	0.49	2.62E-06	8.66E-09

<sup>1</sup> CO<sub>2</sub>- was estimated on the emission factor basis

**Table 4.** Emissions into water generated during production stage A3

Water and sewage	Unit	Total amount
Water	m <sup>3</sup>	5484
Industrial sewage	m <sup>3</sup>	5484
<b>Water emissions</b>		
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

**Table 5.** Waste generated in the phase of product manufacturing A3

Waste code	Unit	total in production [Mg]	used on product [kg/Mg]	used on product [kg/m <sup>2</sup> ]
150101	Mg	20.24	0.179	7.14E-05
150102	Mg	11.1	0.098	3.92E-05
10408	Mg	99.96	0.882	3.53E-04
080120	Mg	0.66	0.006	2.33E-06
150110	Mg	0.037	0.000	1.31E-07
150202	Mg	0.09	0.001	3.18E-07
160107	Mg	0.1	0.001	3.53E-07
160213	Mg	0.143	0.001	5.05E-07
160214	Mg	0.071	0.001	2.51E-07
160216	Mg	0.032	0.0002	1.13E-07

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## 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 6.** Environmental characteristic.

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: 1 kg					
Indicator	Unit	A1	A2	A3	A1-A3
Global warming potential	[kg CO <sub>2</sub> eq.]	1.24	0.00	0.02	1.3
Depletion potential of the stratospheric ozone layer	[kg CFC 11 eq.]	2.57E-07	1.49E-08	2.71E-10	2.73E-07
Acidification potential of soil and water	[kg SO <sub>2</sub> eq.]	0.0055	0.00	0.00004	0.0056
Eutrophication potential	[kg (PO <sub>4</sub> ) <sup>3-</sup> eq.]	0.0004	0.00	0.00001	0.0004
Formation potential of tropospheric ozone	[kg Ethene eq.]	0.0004	0.00	0.00	0.0004
Abiotic depletion potential (ADP-elements) for non-fossil resources	[kg Sb eq.]	0.015	0.00	0.00	0.015
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	[MJ]	5.6	0.0	0.4	6.0

Environmental aspects on resource use: 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]	0.24	0.00	0.02	0.26
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]	6.77	0.07	0.41	7.25
Use of secondary material	[kg]	0.00	0.0000	0.00	0.00
Use of renewable secondary fuels	[MJ]	0.09	0.0000	0.00	0.09
Use of non-renewable secondary fuels	[MJ]	0.14	0.0000	0.00	0.14
Net use of fresh water	[dm <sup>3</sup> ]	0.13	0.0083	0.30	0.43

Other environmental information describing waste categories: 1 kg					
Indicator	Unit	A1	A2	A3	A1-A3
Hazardous waste disposed	[kg]	0.0005	0.00	0.00	0.0005
Non-hazardous waste disposed	[kg]	0.08	0.0004	0.0091	0.0895
Radioactive waste disposed	[kg]	0.00	0.00	0.00	0.00
Components for re-use	[kg]	0.00	0.000	0.0049	0.0049
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



## 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



**Instytut Techniki Budowlanej**

**Zakład Fizyki Ciepłej, Instalacji Sanitarnych i Środowiska**

02-656 Warszawa, ul. Ksawerów 21

# **ŚWIADECTWO nr 016/2014**

## **DEKLARACJI ŚRODOWISKOWEJ III TYPU**

Wyroby:

**Środki gruntujące i farby elewacyjne ATLAS:  
ARKOL SX, ARKOL NX, ARKOL E, ARKOL S, ARKOL N, FASTEL NOVA**

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 Ciepłej,  
Instalacji Sanitarnych i Środowiska

Robert Geryto



Dyrektor  
Instytutu Techniki Budowlanej

Jan Bobrowicz

Warszawa, marzec 2014 r.



