Il colore italiano dal 1831

COATINGS FOR EXTERIORS AND QUARTZ PAINTS

PROFESSIONAL LINE

EPD® Environmental Product Declaration

In accordance with ISO 14025 and EN 15804

PCR 2019:14: **Construction products**
CPC CODE: **3511 – PAINTS AND VARNISHES AND RELATED PRODUCTS**

- PROGRAMME: **The International EPD® System - www.environdec.com**
- PROGRAMME OPERATOR: **EPD International AB**
- GEOGRAPHICAL SCOPE: **Europe**
- REGISTRATION N°: **S-P-01822**
- DATE OF PUBLICATION: **24-9-2020**
- VALID UNTIL: **07-01-2025**

www.boero.it

EPD®
THE INTERNATIONAL EPD® SYSTEM

EPD®

THE INTERNATIONAL EPD® SYSTEM

EPD® ENVIRONMENTAL PRODUCT DECLARATION

BOERO believes in environmental sustainability and is proud to reach a new technical milestone: EPD® Certification of its finishing products

The Environmental Product Declaration or EPD® is a document issued by an **independent entity** that, based on a **Life Cycle Assessment (LCA)** of the products, provides relevant, verified and comparable information about their environmental impact in accordance with **ISO 14025**.

This declaration is classified as **"type III labelling"** according to ISO series 14020.

This declaration allows products to be evaluated in the framework of both public tenders and building sustainability certification systems

OBJECTIVE

COMPARABLE

CREDIBLE

The **EPD**® is:
OBJECTIVE. Environmental performance is calculated using the life cycle analysis methodology, based on the standards set out in ISO 14040.

COMPARABLE. EPD®s in the same product category are comparable because they are developed on the basis of the same rules and requirements (Product Category Rules - PCR).

CREDIBILE. The declaration is verified by a third-party auditor.

BOERO

“Il colore italiano
dal 1831”

Light and colour are Italy's gift to the world and **Boero** is the brand that more than any other, and **for almost two centuries, has personified the country's love of colour**

GROUP SITES
The **"Federico Mario Boero" production facility** located in Rivalta Scrivia in the province of Alessandria in northern Italy, built using cutting-edge criteria and operating since 2009, covers 120,000 square meters, of which 18,000 under cover, with average annual production of 27,000,000 kg/year.

Technological development is performed at the **"Riccardo Cavalleroni" Research and Development Center** in block F at the Rivalta Scrivia Science and Technology Park (PST), where teams of highly qualified engineers work with the main goal of developing innovative product formulation technologies, involving ongoing assessment of latest generation raw materials and upgrading tinting systems.

The **registered office and sales organisation** are in Genoa, where the Group and brand began life.

THE GOAL OF THE STUDY

ENVIRONMENTAL IMPACT ASSESSMENT

The goal of the study is to **assess environmental impact** in relation to the production of Boero Group **COATINGS FOR EXTERIORS AND QUARTZ PAINTS**, using an approach based on life cycle analysis, in order to communicate the results obtained through an **Environmental Product Declaration (EPD®)** in the framework of the International EPD® System.

The recipients of this document are end customers and all stakeholders affected by the environmental impact of the main coatings for exteriors and quartz paints produced by Boero

AVERAGE PRODUCT COMPOSITION	
Water	< 20%
Fillers and pigments	< 65%
Emulsion and resins	< 20%
Additives	< 5%

Average content declaration for the main components in the Boero quartz paint and exterior coatings line.

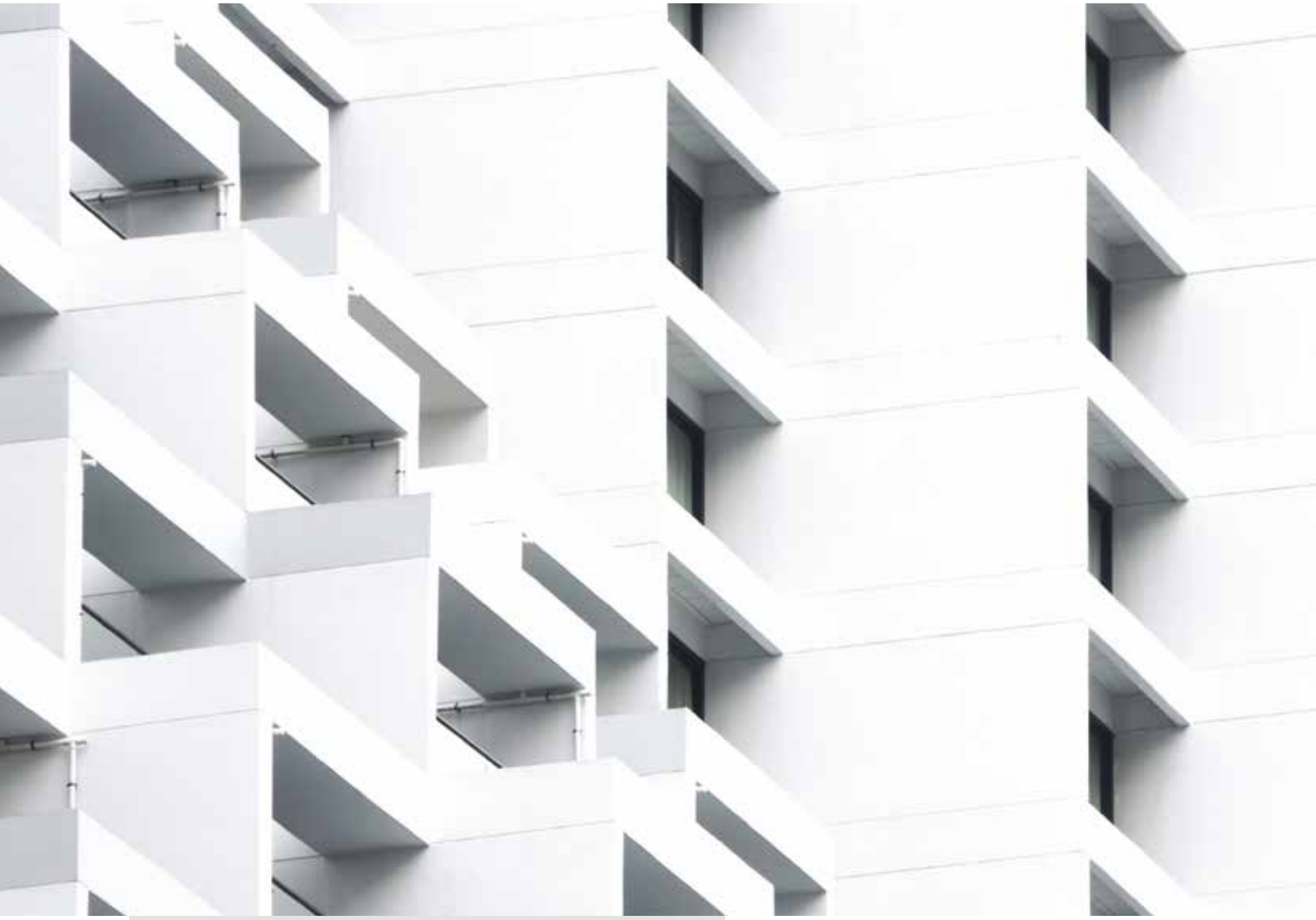
The products studied are quartz paints produced using different classes of raw materials.

Coatings for exteriors and quartz paints are suitable for protecting masonry substrates, including plaster, premixes and similar, and consist of synthetic or mineral binders and pigments resistant to weathering (e.g. sunlight and rain). The formulation also contains selected aggregates (e.g. silica, feldspar and talcum carbonates) and functional additives including thickeners, anti-sediment agents, preservatives and water repellents, etc.

The type of binder (silicates, siloxanes, acrylics, etc.) determines the field of application according to the type of historical or modern building.

PRODUCTS

Boero
Coatings for exteriors
and quartz paints



COD. 700.343

SOLARYA 65

SELF-CLEANING SILOXANE PHOTOCATALYTIC COATING

Photocatalytic nano titanium-based siloxane coating. High vapour permeability. Optimum water repellence and resistance to weathering. Low dirt pick-up. With excellent self-cleaning properties, it contributes to purifying the air in contact with it by converting up to 65% of the harmful gasses it contains (NOx, etc.) into low or zero impact pollutants. Inhibits the formation of microorganisms, ensuring effective anti-algae and anti-mould action.

S-P-01822 **EPD**®
environdec.com

Intended use

For exteriors

Substrates

Masonry substrates in general, civil plaster, premixes, fiber cement, etc.

- **SELF-CLEANING**
- **ANTI-POLLUTION**

COD. 700.380

HABITAT

ANTI-ALGAE COATING FOR EXTERIORS WITH MICRONISED PLASTORITES AND SMALL PARTICLE SIZE

Coating with high resistance to weathering and pollutants. Offering good hiding power, it is versatile and masks any small surface imperfections, as it contains special aggregates for high filling power. Special additives protect the film from attack by algae and mould. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae).

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Masonry substrates in general (plaster, brickwork, cement, etc.)

- HIGH RESISTANCE TO WEATHERING
- GOOD MASKING POWER

COD. 700.379

GAMMA

QUARTZ ANTI-ALGAE COATING, SMALL PARTICLE SIZE

Coating with good resistance to weathering. The controlled particle size (0.1 mm) quartz powder content gives the product high filling power for effective masking of any small imperfections in the substrate. Special additives protect the film from attack by algae and mould. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae). Suitable for protecting and decorating new buildings and for building maintenance.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Civil plaster, concrete, prefabricated structures, fibre cement agglomerates, etc.

- FILLING POWER
- RESISTANT TO ATTACK BY MOULD AND ALGAE

COD. 700.386

BIQUARZ 1.0

HIGH-BUILD ACRYLIC POLYMER ANTI-ALGAE COATING

Coating with outstanding resistance to weathering and abrasion. The high-build applied thickness (up to 1 mm) makes it possible to eliminate any imperfections in the substrate and obtain a “natural lime” type finish, while maintaining good water vapour permeability. Special additives protect the film from attack by algae and mould. Outstanding workability. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae).

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Civil plaster, concrete, prefabricated structures, fibre cement agglomerates, etc.

- UNIFORM SURFACE FILLER
- EXCELLENT RESISTANCE TO ABRASION

COD. 700.383

BIQUARZ 1.5

ACRYLIC ANTI-ALGAE COATING WITH MICRONISED PLASTORITES

Coating with outstanding resistance to weathering and abrasion. The high-build applied thickness (up to 1 mm) makes it possible to eliminate any imperfections in the substrate and obtain a “natural lime” type finish, while maintaining good water vapour permeability. Special additives protect the film from attack by algae and mould. Outstanding workability. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae).

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Civil plaster, concrete, prefabricated structures, fibre cement agglomerates, etc.

- UNIFORM SURFACE FILLER
- EXCELLENT RESISTANCE TO ABRASION

COD. 700.378

FONDO P378

ACRYLIC PIGMENTED PRIMER

Primer ideal for high-build acrylic, acrylic siloxane, elastomeric and traditional finish products. Gives substrates a uniform colour, simplifying the application of finishing products.
It evens out the absorption of cement mortars before subsequent applications.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors and interiorsi

Substrates

Masonry structures in general (plaster, brickwork, cement, reinforced concrete, etc.), except for lime plaster and particularly fragile and porous substrates

- OPTIMISES FINISH HIDING POWER
- IMPROVES COLOUR UNIFORMITY

COD. 700.372

FONDO RIEMPITIVO ACRILICO 0.3

PIGMENTED FILLING PRIMER WITH ACRYLIC BINDERS AND SELECTED PARTICLE SIZE FILLERS

This primer with high filling power improves the appearance of substrates in the case of repairs, differences in particle size and static microcracking. The acrylic nature of the binder ensures excellent adhesion and substrate absorption equalising power, improving the coverage and appearance of the finish. It can be re-coated with siloxane and synthetic products.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors and interiors

Substrates

Non-chalky masonry structures in general (plaster, brickwork, cement, etc.)

- EQUALISING AND HIDING POWER
- EXCELLENT ADHESIVE POWER

COD. 700.397

FONDO RIEMPITIVO ACRILICO 0.5

PIGMENTED FILLING PRIMER WITH ACRYLIC BINDERS AND SELECTED PARTICLE SIZE FILLERS

This primer with high filling power improves the appearance of substrates in the case of repairs, differences in particle size and static microcracking. The acrylic nature of the binder ensures excellent adhesion and substrate absorption equalising power, improving the coverage and appearance of the finish. It can be re-coated with siloxane and synthetic products.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors and interiors

Substrates

Non-chalky masonry structures in general (plaster, brickwork, cement, etc.)

- EQUALISING
- HIDING AND FILLING POWER

COD. 700.303

ACRIS

ACRYLIC SILOXANE ANTI-ALGAE COATING, WITH MICRONISED PLASTORITES AND SELECTED FILLERS

Coating with high resistance to weathering, low water absorption and good water vapour permeability. Containing special fillers, it has excellent hiding power and masks any small surface imperfections. Special additives protect the film from attack by algae and mould. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae).

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Masonry structures in general, both new or already treated with old mineral or dispersion-based coatings

- HIGH RESISTANCE TO WEATHERING
- WATER REPELLENT AND VAPOUR PERMEABLE

COD. 700.387

BIQUARZ ACRILSILOSSANICO 1.0

HIGH-BUILD ACRYLIC SILOXANE ANTI-ALGAE COATING

The siloxane polymer content of this coating gives it good vapour permeability and water repellency. With excellent resistance to weathering and abrasion, it conceals any imperfections in the substrate and creates a “lime mortar” type finish (applied thickness up to 1.0 mm). Special additives protect the film from attack by algae and mould. Outstanding workability. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae). In compliance with standard DIN 4108-3 on facade protection.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Civil plaster, concrete, prefabricated structures, fibre cement agglomerates, etc.

- EXCELLENT FILLING POWER
- LIME MORTAR TYPE FINISH

COD. 700.389

BIQUARZ ACRILSILOSSANICO 1.5

HIGH-BUILD ACRYLIC SILOXANE ANTI-ALGAE COATING

The siloxane polymer content of this coating gives it good vapour permeability and water repellency. With excellent resistance to weathering and abrasion, it conceals any imperfections in the substrate and creates a “lime mortar” type finish (applied thickness up to 1.0 mm). Special additives protect the film from attack by algae and mould. Outstanding workability. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae). In compliance with standard DIN 4108-3 on facade protection.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Civil plaster, concrete, prefabricated structures, fibre cement agglomerates, etc.

- EXCELLENT FILLING POWER
- LIME MORTAR TYPE FINISH

COD. 700.317

ARIETE

SILOXANE RESIN ANTI-ALGAE COATING

Anti-algae coating with high vapour permeability, low water absorption and excellent water repellency. Versatility of use, excellent adhesion to all types of masonry substrate and extreme ease of application make the product particularly suitable for renovating historical buildings and colouring modern constructions. Special additives protect the film from attack by algae and mould. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae).

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Masonry structures in general, both new or already treated with old mineral or dispersion-based coatings

- HIGH VAPOUR PERMEABILITY
- EXCELLENT WATER REPELLENCY

COD. 700.316

ARIETE INTONACO 1.0

HIGH-BUILD SILOXANE RESIN ANTI-ALGAE COATING

Coating with high vapour permeability, water repellency and resistance to weathering and pollutants. It conceals any imperfections in the substrate and creates a “lime mortar” type finish (applied thickness up to 1.0 mm). Special additives protect the film from attack by algae and mould. Outstanding workability. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae). In compliance with standard DIN 4108-3 on facade protection.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Masonry structures in general, both new or already treated with old mineral or dispersion-based coatings

- HIGH FILLING POWER
- HIGH RESISTANCE TO POLLUTANTS

COD. 700.326

ARIETE INTONACO 1.5

HIGH-BUILD SILOXANE RESIN ANTI-ALGAE COATING

Coating with high vapour permeability, water repellency and resistance to weathering and pollutants. It conceals any imperfections in the substrate and creates a "lime mortar" type finish (applied thickness up to 1.0 mm). Special additives protect the film from attack by algae and mould. Outstanding workability. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae). In compliance with standard DIN 4108-3 on facade protection.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Masonry structures in general, both new or already treated with old mineral or dispersion-based coatings

- HIGH FILLING POWER
- HIGH RESISTANCE TO POLLUTANTS

COD. 700.318

ARIETE FONDO 318

CONSOLIDATING AND HYDROPHOBIC SILOXANE PRIMER WITH SPECIAL ACRYLIC SILOXANE EMULSIONS

Consolidating and hydrophobic primer with outstanding substrate penetration. Reduces and evens out substrate absorption without inhibiting water vapour transmission. Reduces the surface migration of salts produced by carbonation in new plasters that are still setting.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors and interiors

Substrates

Masonry structures in general (plaster, brickwork, cement, etc.)

- EQUALISING ACTION
- FIGHTS CARBONATION

COD. 700.319

ARIETE FONDO 319

PIGMENTED PRIMER WITH ACRYLIC SILOXANE RESINS IN EMULSION

Pigmented acrylic siloxane primer for substrate preparation in high-build acrylic siloxane coating systems. The product evens out areas with different absorption and reconsolidates the substrate. Also ideal as a primer for reinforced mineral systems.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors and interiors

Substrates

Masonry structures in general (plaster, brickwork, cement, etc.)

- IDEAL FOR HIGH-BUILD FINISHES AND AS PRIMER FOR REINFORCED MINERAL SYSTEMS
- GOOD HIDING POWER

COD. 700.322

LITOSIL

POTASSIUM SILICATE-BASED MINERAL PAINT WITH ORGANIC STABILISERS

Paint in compliance with standards DIN 4108.3 on facade protection and DIN 18363, according to which a product can be defined as “mineral” if it contains less than 5% organic substances. Outstanding water vapour permeability and excellent substrate adhesion. Suitable for restoring historical buildings, buildings of great artistic and architectural value, and where maximum breathability is required.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Non-chalky lime or lime/cement masonry structures

- IDEAL FOR RESTORING HISTORICAL AND PRESTIGIOUS BUILDINGS
- NATURAL ANTI-ALGAE ACTION

COD. 700.321

LITOSIL FONDO 321

PURE POTASSIUM SILICATE MINERAL FIXATIVE FOR SMOOTH FINISHES

Primer for use as undercoat in silicate painting systems. It forms a crystal lattice with the mineral substrate and can therefore only be applied on lime-based substrates to increase their weatherability and resistance to pollution. It can also be used to dilute Litosil for decorative effects such as glazing, ragging, etc.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors and interiors

Substrates

Non-chalky lime or lime/cement masonry structures

- EXCELLENT PENETRATION
- RESISTANT TO ALKALIS

COD. 700.320

FONDO DI COLLEGAMENTO

PIGMENTED POTASSIUM SILICATE-BASED MINERAL PRIMER WITH ORGANIC BINDERS

Pigmented primer with particle size Ð 0.4 mm. Suitable for use as a preparatory base coat on old substrates painted with synthetic products before applying Litosil or other mineral finishing products. Evens out differences in substrate absorption and improves the appearance of spot repairs or irregularities. It has a special structure that hides static microcracking caused by plaster shrinkage.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Non-chalky masonry structures in general (plaster, brickwork, cement, etc.)

- EXCELLENT MASKING EFFECT
- FILLING ACTION

COD. 700.358

FONDO DI COLLEGAMENTO 0.5

PIGMENTED POTASSIUM SILICATE-BASED MINERAL PRIMER WITH ORGANIC BINDERS

Pigmented primer with particle size 0.5 mm. Suitable for use as a preparatory base coat on old substrates painted with synthetic products before applying Litosil or other mineral finishing products. Evens out differences in substrate absorption and improves the appearance of spot repairs or irregularities. It has a special structure that hides static microcracking caused by plaster shrinkage.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Non-chalky masonry structures in general (plaster, brickwork, cement, etc.)

- EXCELLENT MASKING EFFECT
- FILLING ACTION

COD. 700.315

SILNOVO

POTASSIUM POLYSILICATE ANTI-ALGAE PAINT FOR EXTERIORS WITH ORGANIC STABILISERS

Paint in compliance with standards DIN 4108-3 on facade protection and DIN18363. High water vapour permeability and low water absorption. Can be applied on all types of substrate, even if previously treated with synthetic or emulsion paints. Suitable for restoring historical buildings and buildings of great artistic and architectural value. Special additives protect the film against attack by algae and mould. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae).

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Non-chalky lime or lime/cement masonry structures

- HIGH WATER VAPOUR PERMEABILITY
- LOW WATER ABSORPTION

COD. 700.333

SILNOVO INTONACO 1.0

ANTI-ALGAE POTASSIUM POLYSILICATE-BASED COATING

Coating with high vapour permeability and high water repellency. The controlled particle size fillers make it effective at equalising and masking uneven substrates. Special additives protect the film against attack by algae and mould. Excellent adhesion on all types of masonry substrate make the product particularly suitable for renovating historical buildings and colouring modern constructions. In compliance with standard DIN 4108-3 on facade protection. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae).

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Masonry structures in general, both new or already treated with old mineral or dispersion-based coatings

- HIGH WATER VAPOUR PERMEABILITY
- EXCELLENT ADHESION TO ALL TYPES OF SUBSTRATE

COD. 700.332

SILNOVO FONDO 332

CONSOLIDATING POTASSIUM POLYSILICATE-BASED PRIMER

Water-based consolidating and hydrophobic primer with excellent water vapour permeability, ideal for reducing and equalising substrate absorption. Reduces the surface migration of salts produced by carbonation in new plasters that are still setting.

S-P-01822 **EPD**®
environdec.com

Intended use

For exteriors and interiors

Substrates

External and internal masonry structures in general (plaster, brickwork, cement, etc.)

- **CONSOLIDATING AND HYDROPHOBIC**
- **RESISTENT TO ALKALIS**

COD. 700.331

SILNOVO VELATURA

UNIVERSAL POTASSIUM POLYSILICATE-BASED DECORATIVE FINISH FOR EXTERIORS AND INTERIORS

Universal decorative finish. Can be used to easily and quickly create durable decorative effects with a premium appearance. The mineral binder ensures excellent adhesion to the substrate and outstanding permeability to water vapour. The special formulation of the product means that it can be applied both on mineral and polymer primers.

S-P-01822 **EPD**®
environdec.com

Intended use

For exteriors and interiors

Substrates

Masonry structures in general

- **EXCELLENT WORKABILITY**
- **REFINED DECORATIVE APPEARANCE**

COD. 700.843

UVIFLEX PITTURA

ANTI-ALGAE ELASTOMERIC FINISH WITH ACRYLIC CO-POLYMERS AND SELECTED FINE FILLERS

Coating with excellent hiding power, excellent resistance to weathering, and double crosslinking: on the surface, induced by UV rays, for excellent water repellency and low dirt pick-up, and chemical, for elasticity, even at low temperatures. Suitable for protecting and waterproofing new or renovated buildings and reinforced concrete structures. Hides and resists dynamic crazing up to 300 µ deep. Special additives protect the film from mould, etc. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae).

S-P-01822 **EPD**®
environdec.com

Intended use

For exteriors

Substrates

External and internal masonry structures in general (plaster, brickwork, cement, etc.)*

- **PHOTO CROSSLINKABLE**
- **LOW DIRT PICK-UP**

* Not suitable for application on lime-based plasters, particularly fragile and porous substrates, dehumidifying plasters and in interiors.

COD. 700.842

UVIFLEX INTERMEDIO

ANTI-ALGAE INTERMEDIATE FILLING COATING BASED ON ACRYLIC CO-POLYMERS

Anti-algae intermediate filling coating ideal for restraining and masking dynamic crazing and microcracking. High resistance to cracking and capable of equalising uneven and irregular substrates. Special additives protect the film from attack by algae and mould. Suitable for new buildings or for maintenance on civil and rough plaster, reinforced concrete and fibre cement. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae).

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Masonry structures in general (plaster, brickwork, cement, etc.)**

- EXCELLENT FILLING POWER
- HIGH ELASTICITY

COD. 700.845

UVIFLEX INTONACO 1.0

HIGH-BUILD ANTI-ALGAE ELASTOMERIC COATING

Elastic coating with excellent water repellency and low dirt pick-up. Suitable for protecting and waterproofing new buildings or for maintenance, also on reinforced concrete. Featuring excellent filling power and resistance to weathering, it evens out substrate irregularities and any spot repairs. Special additives protect the film from attack by algae and mould. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae).

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Masonry structures in general (plaster, brickwork, cement, etc.)**

- HIGH ELASTICITY AND FILLING POWER
- ANTI-CARBONATION

COD. 700.825

B.BETON

ANTI-ALGAE ACRYLIC WALL COATING WITH MICRONISED PLASTORITES

Paint with superior resistance to weathering and alkalis, good water vapour permeability and low water absorption. Ideal for protecting reinforced concrete structures because its high resistance to CO2 diffusion provides excellent anti-carbonation protection. Special additives protect the film from attack by algae and mould. In compliance with standards UNI EN 15457 (resistance to fungi) and UNI EN 15458 (resistance to algae). In compliance with standard DIN 4108-3 on facade protection.

S-P-01822 EPD®
environdec.com

Intended use

For exteriors

Substrates

Masonry structures in general (plaster, brickwork, reinforced cement, etc.)

- ANTI-CARBONATION
- RESISTANCE TO CO_2 DIFFUSION

** Except for lime plaster or particularly fragile and porous substrates

METHODOLOGY USED

RULES AND REGULATIONS

The environmental performance of products is calculated in accordance with the requirements of the **International EPD® System** and the Product Category Rules (PCR) 2019:14 Version 1.0 - **Construction Products**.

The methodology used to quantify environmental performance is **Life Cycle Assessment (LCA),** as regulated by **ISO 14040-14044**

The goal of the LCA study is to assess environmental impact in relation to the production of the Boero Group coatings for exteriors and quartz paints examined.
To this end, specific data has been collected for the **Rivalta Scrivia production facility** and refers to **2018**. Proxy data (i.e. generic data based on estimates and average values) represents less than 10% of the total.

The stated unit is 1 kg of product (including packaging).

As the products have different industrial formulas, the environmental performance declaration reports an **average value weighted** for production by product class. In accordance with the applicable PCR and EN 15804, the variation for the potential greenhouse effect is given below.

SYSTEM BOUNDARIES

In accordance with the applicable PCR and standard EN 15804, the system boundaries refer to the following **three stages in the product life cycle**:

PRODUCT STAGE
("FROM CRADLE-TO-GATE")

MODULE A1

Processes relating to the **procurement of raw materials and energy.**

CONSTRUCTION PROCESS STAGE
("FROM GATE-TO-GATE")

MODULES A2-A3

Processes involved in **raw materials transport** from the suppliers to the factory (and any internal transport) and in the **production of the product**.

USE STAGE
("FROM GATE-TO-GRAVE")

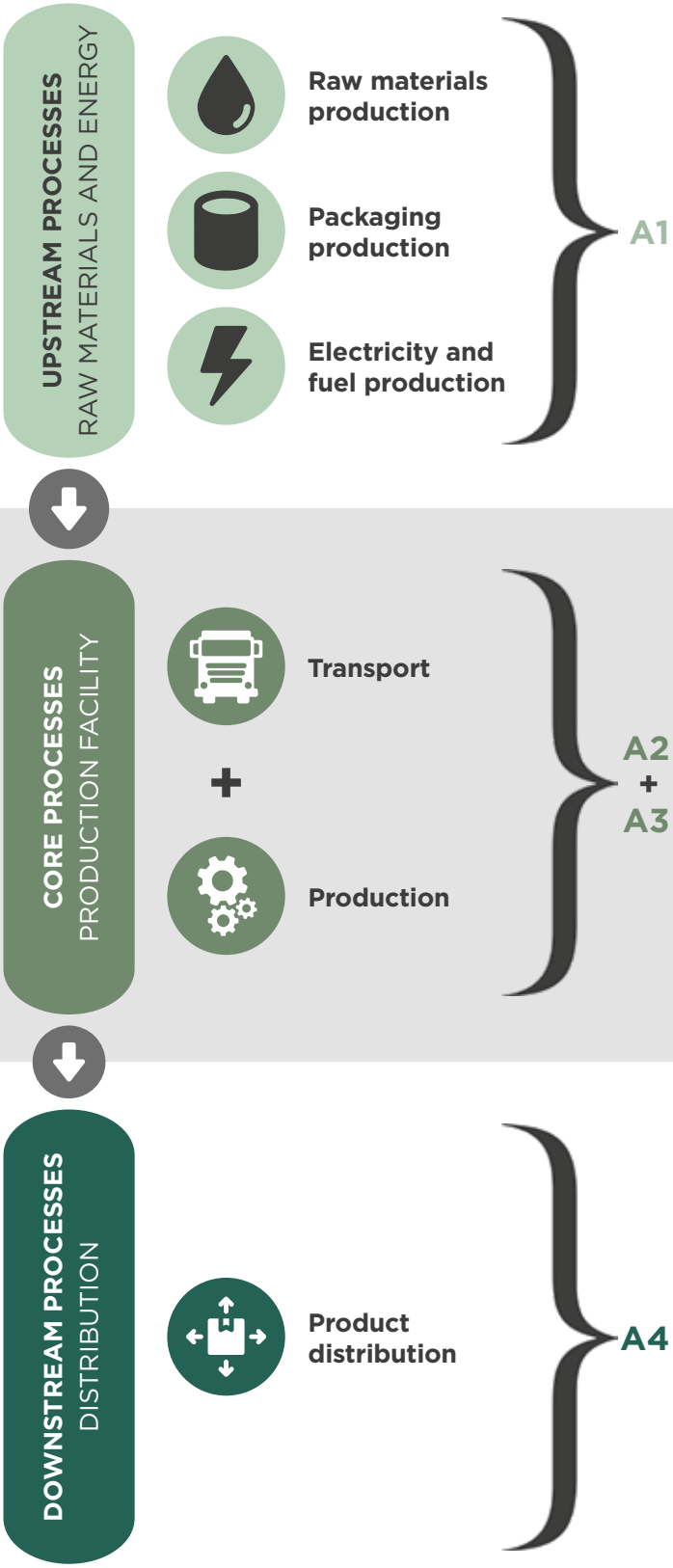
MODULES DA A4 A D

Processes relating to the **storage, transport, use and disposal/recycling of the product.**

The approach used for this study is of the **"cradle-to-gate with options"** type.

The approach used for this study is of the "cradle-to-gate with options" type.
(Figure 1 and Table 2)

DECRIPTION OF THE PROCESSES



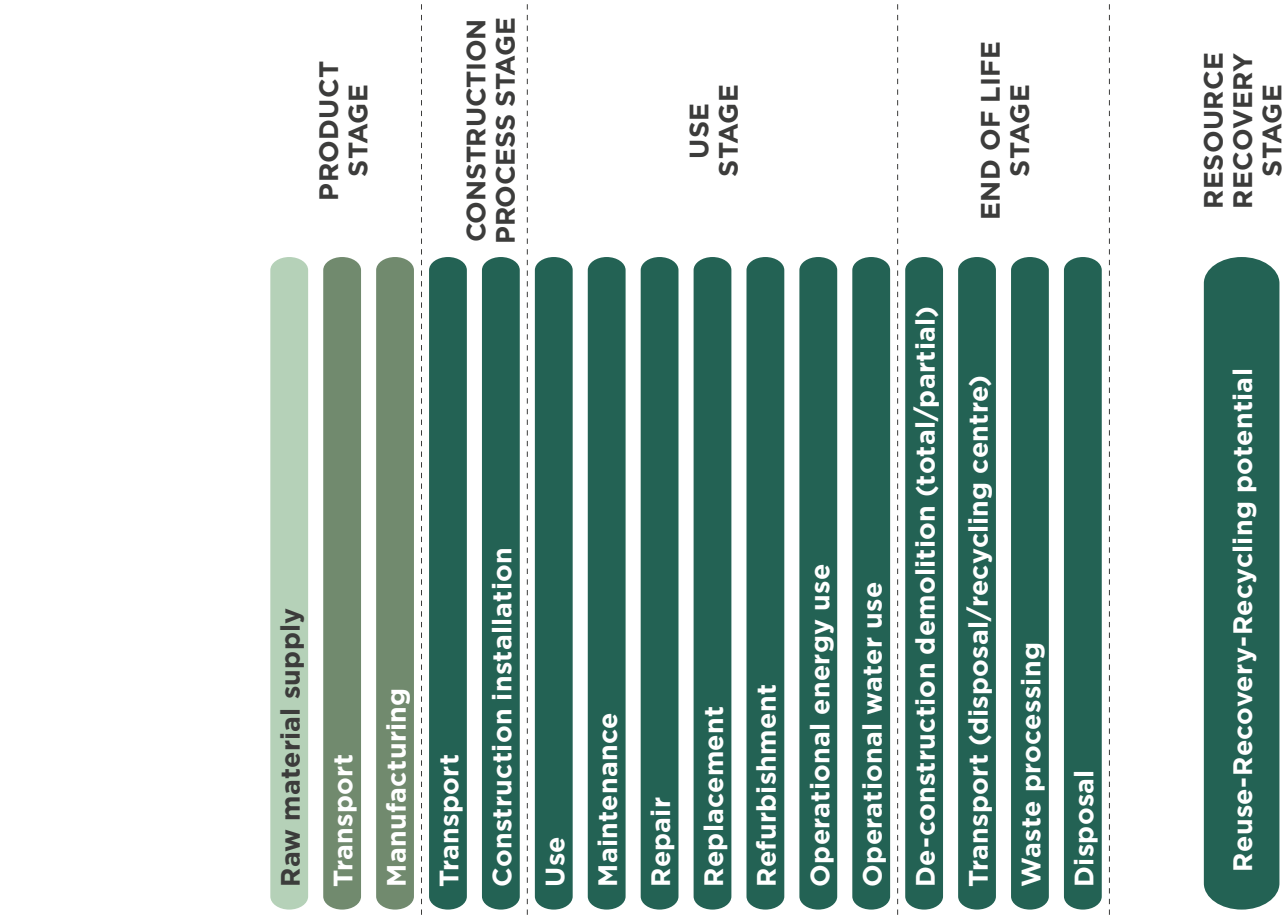
The production process starts with the **production and transport of all raw materials** used to manufacture the product (**Upstream processes**), including its components and materials needed for the production processes (e.g. energy). In more detail, products generally consist of a series of powders, resins, pigments and additives of various types.

The **product stages (Core processes)** are performed at the Rivalta Scrivia production facility: they include mixing the "ingredients" to produce the water-based paint and its primary and secondary/tertiary packaging (e.g. stretch film for bundling and wood pallets).

After packaging, the product begins the distribution stage (which forms part of the Downstream processes). The distribution stage involves:

- **storage** in the Boero Group's Rivalta Scrivia distribution centre;
- **transport** of the product to points of sale.

Figure 1
System boundaries



Modules	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4		D
Modules declared	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-		-
Geography	EU 27	EU 27	EU 27	EU 27	-	-	-	-	-	-	-	-	-	-	-	-		-
Specific data	>90%					-	-	-	-	-	-	-	-	-	-	-		-
Variation: products	49.5% - 118.7%					-	-	-	-	-	-	-	-	-	-	-		-
Variation: sites	Not relevant					-	-	-	-	-	-	-	-	-	-	-		-

Table 2
System boundaries ("**X**" = oncluded in study; "**-**" = module not declared)

USE OF RESOURCES

PRIMARY ENERGY RESOURCES - RENEWABLE

PARAMETER	UNIT	A1	A2	A3	A4	TOTAL
Use as energy carrier	MJ, net calorific value	3.831	0.013	0.006	0.017	**3.867**
Use as raw materials	MJ, net calorific value	1.652	0.003	0.003	0.005	**1.664**
TOTAL	**MJ, net calorific value**	**5.483**	**0.016**	**0.010**	**0.022**	**5.531**

PRIMARY ENERGY RESOURCES – NON-RENEWABLE

PARAMETER	UNIT	A1	A2	A3	A4	TOTAL
Use as energy carrier	MJ, net calorific value	22.568	1.107	0.081	1.650	**25.408**
Use as raw materials	MJ, net calorific value	2.179	0.003	0.001	0.004	**2.187**
TOTAL	**MJ, net calorific value**	**24.748**	**1.110**	**0.082**	**1.654**	**27.595**

SECONDARY ENERGY RESOURCES

PARAMETER	UNIT	A1	A2	A3	A4	TOTAL
Secondary material	kg	-	-	-	-	-
Renewable secondary fuels	MJ	-	-	-	-	-
Non-renewable secondary fuels	MJ	-	-	-	-	-
Non-renewable secondary fuels	m^3	0.000	0.000	0.026	0.000	**0.026**

Table 3
Use of resources (the data refer to the stated unit)

POLLUTANT EMISSIONS

POLLUTANT EMISSIONS							
PARAMETER		**UNIT**	**A1**	**A2**	**A3**	**A4**	**TOTAL**
Global Warming Potential (GWP)	Fossil	kg CO_2 eq	1.392	0.068	0.061	0.101	**1.622**
	Biogenic	kg CO_2 eq	0.160	0.000	0.000	0.001	**0.161**
	Land use	kg CO_2 eq	0.007	0.000	0.000	0.000	**0.007**
	TOTAL	**kg CO_2 eq**	**1.558**	**0.068**	**0.062**	**0.102**	**1.790**
Total GWP (without biogenic CO_2)		**kg CO_2 eq**	**1.400**	**0.068**	**0.061**	**0.101**	**1.631**
GWP-GHG		**kg CO_2 eq**	**1.558**	**0.068**	**0.062**	**0.102**	**1.790**
Acidification Potential (AP)		kg SO_2 eq	0.011	0.000	0.000	0.000	**0.012**
Acidification Potential (AP)		mol H+ eq	0.011	0.000	0.000	0.000	**0.012**
Eutrophication aquatic freshwater (EP-freshwater)		kg PO_4^{3-}eq	0.002	0.000	0.000	0.000	**0.003**
Eutrophication aquatic marine (EP-marine)		kg N eq	0.002	0.000	0.000	0.000	**0.002**
Eutrophication terrestrial (EP)		mol N eq	0.013	0.001	0.000	0.002	**0.017**
Ozone depletion (ODP)		kg CFC-11 eq	$1.42 \cdot 10^{-7}$	$1.25 \cdot 10^{-8}$	$7.30 \cdot 10^{-10}$	$1.87 \cdot 10^{-8}$	**$1.74 \cdot 10^{-7}$**
Photochemical oxidant formation (POFP)		kg NMVOC eq	0.004	0.000	0.000	0.001	**0.005**
Abiotic depletion potential Elements		kg Sb eq	$6.60 \cdot 10^{-6}$	$1.88 \cdot 10^{-7}$	$1.51 \cdot 10^{-8}$	$2.83 \cdot 10^{-7}$	**$7.09 \cdot 10^{-6}$**
Abiotic depletion potential Fossil fuels		MJ, net calorific value	19.987	1.025	0.075	1.532	**22.618**
Water scarcity potential (WSI)		m^3 eq	0.799	0.006	0.003	0.008	**0.816**

Table 4
Pollutant emissions
(The data refer to average results per stated unit. See glossary, page 30)

WASTE PRODUCTION

WASTE PRODUCTION AND OTHER INDICATORS

PARAMETER	UNIT	A1	A2	A3	A4	TOTAL
Hazardous waste disposed	kg	0,005	0,000	0,008	0,000	**0,014**
Non-hazardous waste disposed	kg	0,344	0,049	0,016	0,073	**0,481**
Radioactive waste disposed	kg	$7{,}05 \cdot 10^{-5}$	$7{,}08 \cdot 10^{-6}$	$3{,}23 \cdot 10^{-7}$	$1{,}06 \cdot 10^{-5}$	**$8{,}85 \cdot 10^{-5}$**

Table 5
Waste production
(Data refer to average results per stated unit)

INTERPRETATION OF RESULTS - GWP

By way of example, the contribution of the various life cycle stages to Global Warming Potential (GWP) is reported in the figure below:

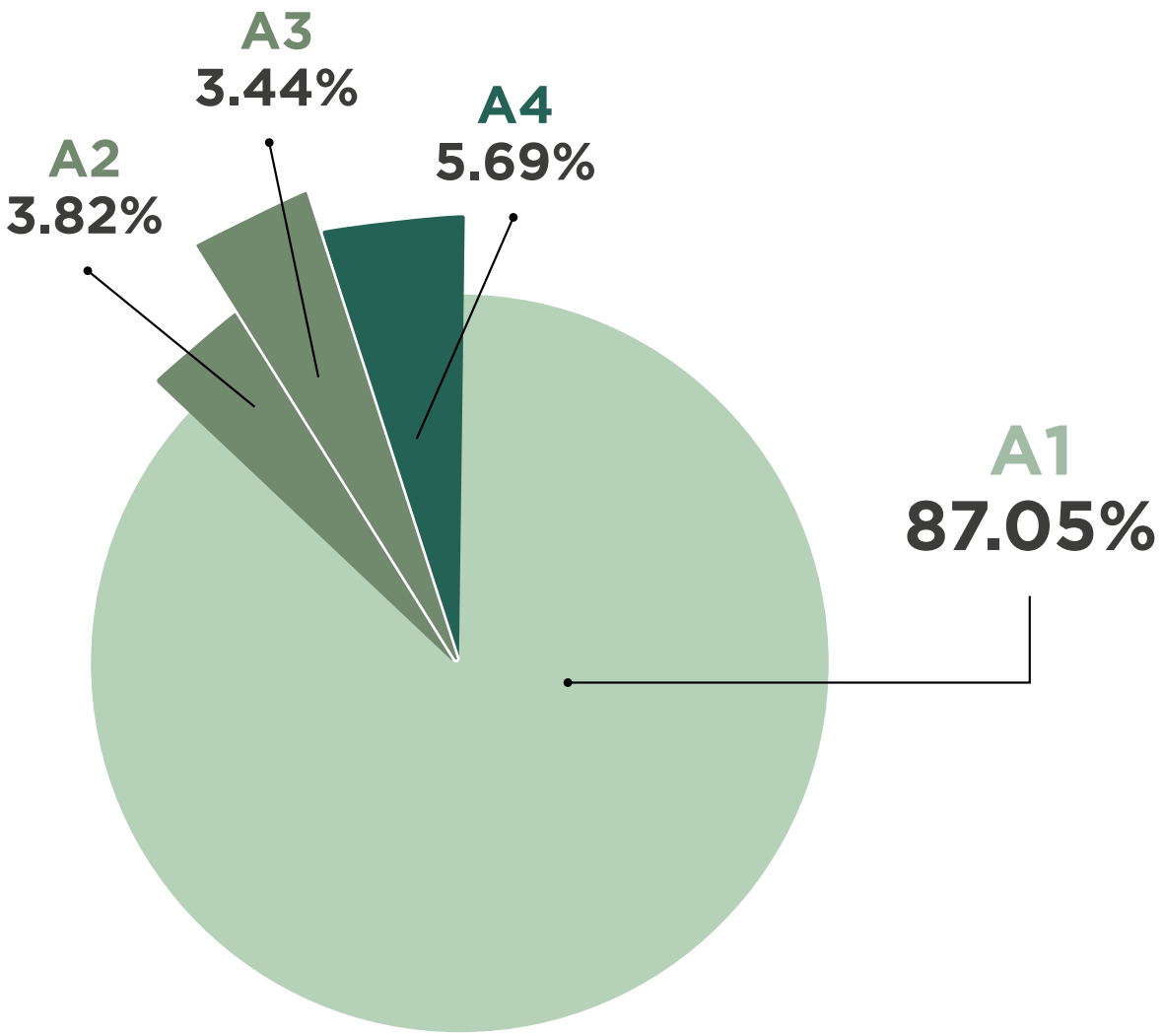


Figure 2
Global Warming Potential (GWP)

As can be seen, the most significant stage (over 87%) consists of the Upstream processes (A1), i.e. procurement processes for raw materials (product components or materials needed for production processes) performed upstream of manufacturing processes in the factory.

INFORMATION

CERTIFICATION ENTITY

This EPD® has been approved by an independent auditor in accordance with the rules and regulations published by the **International EPD® System** *(General Programme Instructions for the International EPD® System)* and with **PCR 2019:14 Version 1.0, Construction Products**.

EN 15804 STANDARD USED AS CORE PCR

PCR	PCR 2019:14 Version 1.0 - Construction products
PCR REVIEW BY	International EPD® System Technical Committee: info@environdec.com
INDEPENDENT VERIFICATION OF THE DECLARATION AND DATA PERFORMED IN ACCORDANCE WITH ISO 14025	EPD® verification
THIRD-PARTY AUDITOR	Guido Croce. Approved by: The International EPD® System Technical Committee, supported by the Secretariat
THE DATA FOLLOW-UP PROCEDURE DURING THE PERIOD OF VALIDITY OF THE EPD® INVOLVES VERIFICATION BY A THIRD PARTY	Yes

Table 6
Standard EN 15804 serves as the core PCR (**EPD® valid until 07-01-2025**)

NOTES
EPD®s developed in accordance with different programmes may not be comparable.

EPD®s for construction products may not be comparable if they are not in compliance with standard EN 15804.

All stages in the life cycle have been analysed and accounted for in the study.

This EPD® and additional information about it are available on the International EPD® System website:
www.environdec.com

REFERENCES
General Programme Instructions for the International EPD® System, v.3.0.

PCR 2019:14 Version 1.0 Construction Products

EN 15804:2012+A2:2019

ISO 21930 Environmental Declaration of Building Products.
Database Ecoinvent v.3.5 (www.ecoinvent.org)

LCA study "Water-Based, Quartz and Enamel Paints" Rev.0 - BOERO BARTOLOMEO S.P.A.

GLOSSARY

LIFE CYCLE ASSESSMENT (LCA)

This is a technique regulated by standard ISO 14040 to quantify the energetic and environmental load of a product system's life cycle by quantifying the energy and materials used and the air, liquid and solid emissions released into the environment, from raw material extraction to disposal of final waste.

PRODUCT CATEGORY RULES (PCR)

Specific product requirements.

GLOBAL WARMING POTENTIAL (GWP)

Global warming due to the emission into the atmosphere of greenhouse gases (GHG) such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), etc.

OZONE DEPLETION POTENTIAL (ODP)

Degradation and reduction, caused by chlorofluorocarbons (CFC) or chlorofluoromethanes (CFM), of the ozone layer in the stratosphere, which filters the ultraviolet component of the sun's rays thanks to its particularly reactive compounds.

ACIDIFICATION POTENTIAL (AP)

Drop in the pH of soils, lakes and forests due to the emission of acidifying compounds into the atmosphere, with harmful effects on living organisms (e.g. 'acid rain'). The indicator is expressed in kg SO_2 eq (sulphur dioxide) and in mol N eq (moles of nitrogen).

EUTROPHICATION POTENTIAL (EP)

Reduction in dissolved oxygen levels in water media, with the collapse of fish and other aquatic species due to excess addition of large quantities of mineral nutrients such as nitrogen and phosphorous and the subsequent dramatic increase in flora that feed on these nutrients.

The indicator is expressed in kg PO43- eq (phosphate), kg N eq (nitrogen) and mol N eq (moles of nitrogen).

PHOTOCHEMICAL OXIDANT FORMATION POTENTIAL (POFP)

Ozone formation on the earth's surface due to the emission of unburnt hydrocarbons and nitrogen oxides into the atmosphere in the presence of solar radiation. This phenomenon is harmful to living organisms and is often present in large urban centres. The indicator is expressed in kg NMVOC eq (Non-Methane Volatile Organic Compounds).

WATER SCARCITY INDEX (WSI)

Indicator that represents the equivalent volume of water consumed proportionate to the water availability of single countries.

Main contacts for the Environmental Product Declaration

Dott. Gino Poli
Boero Bartolomeo S.p.A.
E-mail: gino.poli@boero.it

Dott. Eraldo Parodi
Boero Bartolomeo S.p.A.
E-mail: eraldo.parodi@boero.it

Prof. Ing. Adriana Del Borghi
TETIS Institute S.R.L.
(TEchniques for The Impact on Sustainability)
E-mail: delborghi@tetisinstitute.it

www.tetisinstitute.org

QUALITÀ ITALIANA
dal 1831

Boero Bartolomeo S.p.A.
Via G. Macaggi, 19
16121 Genova - Italy
Tel. +39 010 5500.1
Fax +39 010 5500.300
sales.boero@boero.it
www.boero.it

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