



cromology
the art of professional painting

Dulox

SMALTI ALL'ACQUA



Environmental Product Declaration



THE INTERNATIONAL EPD® SYSTEM

This EPD has been developed in compliance with ISO 14025:2010 and EN 15804:2012+A2: 2019

Registration number
S-P-05991

Publication Date
2022/07/29

Valid until
2027/07/29

Programme
The International EPD® System
www.environdec.com

Programme operator
EDP International AB



3.700
COLLABORATORS



9
PRODUCTION SITES



20%
OF SALES GENERATED
BY NEW PRODUCTS



5
R&D
LABORATORIES



7
LOGISTICS HUBS



50
COUNTRIES
WHERE THE PRODUCTS
ARE MARKETED



8
COUNTRIES WITH
DIRECT PRESENCE



100
RESEARCHERS



600
MILLION ANNUAL
TURNOVER

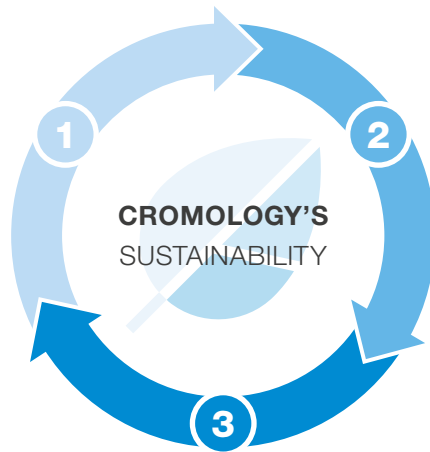
The Cromology Group

The Cromology Group was founded in 2015, at the end of a decades-long transformation process that began in the late 1990s, when Lafarge Peintures created the Specialty Materials division that was later Materis Paints and quickly became a player on the global and emerging markets. Today, Cromology retains that pioneering spirit of its Dutch origins in the 1700s, confirming itself as a solid, worldwide group and a leader in Southern Europe, with a presence in 50 countries, and a global annual turnover of more than 600 mln/€. The group's strength is expressed through its 3700 employees including 100 researchers and highly specialised technicians - 9 production sites and 5 R&D laboratories.

Cromology's brands are marketed in over 50 countries worldwide, with a direct presence in 8 countries. In each market, Cromology's brands are an expression of its history, professionalism and capacity for innovation. 20% of the turnover is generated by new products.

Cromology Italia believes in a multi-channel strategy diversified by brand, range of services and type of customer: from designers to professional applicators and private customers. With an offer of 7 specialised brands, Cromology holds 7% of the Italian market, an absolute leadership position.

With headquarters in Porcari, in the province of Lucca, the company counts on two state-of-the-art production sites of 80,000 square metres, a 45,000 square metre logistics hub and the cooperation throughout Italy of 400 collaborators, including head office staff and a sales network. With its own brand portfolio and a wide range of products and services, Cromology's aim is to be a trusted partner alongside customers, professionals and private individuals, in order to achieve professional excellence together.



1 PRODUCT SAFETY AND LIABILITY

Innovation for offering colours and paints that are increasingly more respectful of the environment and health of users



Indoor quality



HACCP - Hygiene-Healthcare Prevention Protocol



ISO 9001:2015 Quality Management System



UNI EN 15457 Anti-mould Efficacy

UNI EN 15458 Anti-algae Efficacy



ISO 22196 Bacteriostatic Certificate

2 ENVIRONMENTAL RESPONSIBILITY

To minimise the impact of activities on the environment



ISO 14001:2015 Protection of the environment in industrial production



Environmental Product Declaration



Ecolabel

100% Green Energy Certification

3 SOCIAL RESPONSIBILITY

To ensure the health and safety for its employees; enabling everyone to evolve; fostering the highest standard of integrity and compliance with the regulations in force



ISO 45001:2018 Occupational Health & Safety Management System

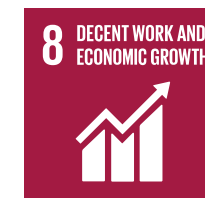
DLGS 231/2001 Corporate Administrative Liability

CSR

Sustainability

The Cromology Group's approach to sustainability stems from its Mission: **to responsibly protect and colour homes to improve everyone's life.** Cromology places Corporate Social Responsibility (CSR) at the heart of its strategy, at the same level as profitable growth and operational excellence. Cromology integrates its CSR objectives into business development and new product launches. Cromology's CSR approach relates to the Sustainable Development Goals (SDGs) defined by the United Nations. Cromology has identified the 5 SDGs most relevant to its activities and on the basis of these is committed to responsible and sustainable development in order to maximise the value generated for customers, employees, shareholders, suppliers, civil society and local communities.

CONTRIBUTION TO THE SDG:

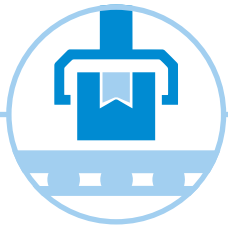


EPD programme, general information

EPD programme	The International EPD® System - www.environdec.com
EPD Programme operator	EPD International AB Box 210 60. SE-100 31 Stockholm. Sweden
Product Category Rules (PCR)	International EPD System - PCR 2019:14 - "Construction products" - Version 1.11 EN 15804:2012+A2:2019 - "Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products."
EPD Drafted by	Leyton Italia s.r.l
Declaration holder	Dr. Marco Demi Cromology Italia S.p.A.
Checked by	Guido Croce
Geographical reference	International
EPD registration number	S-P-05991
Publication date	29/07/2022
Expiry date	29/07/2027
Product description	Dulox Smalti all'Acqua
Application scope	The LCA analysis was conducted according to the ISO 14025, ISO 14040, ISO 14044 and EN15804 standards. Both process-specific data and data from the Ecoinvent 3.6 database were used. The methods for calculating and assessing the impacts were used as defined in 2019 EN 15804 2012+A2:2019. The LCA study covers the production phases of raw materials and energy; transport of materials; production at the company's sites; and the end of life of the material.



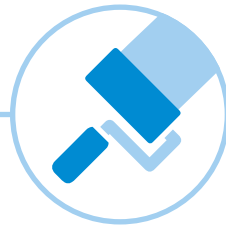
Environmental Declaration



PRODUCTION



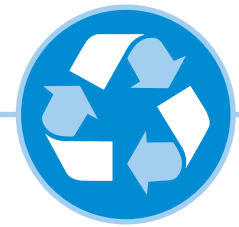
DISTRIBUTION
& INSTALLATION



USE &
MAINTENANCE



END-OF-LIFE
& DISPOSAL



REUSE &
RECYCLING



The abbreviation EPD stands for **Environmental Product Declaration** and is a document in which the environmental performance of a product is described in the form of standardised and objective data. It makes it possible to analyse and quantify how much energy and natural resources are used by production and distribution processes, how much CO₂ is emitted into the atmosphere, what materials are used for packaging and how much waste is generated. In the field of construction, the **EPD is an essential basis for professionals** such as architects and designers when it comes to the overall planning and evaluation of interventions. As the validation of the EPD must be performed by recognised Certification Bodies, it represents an important act of transparency and accountability for the market.

EPDs, created on a voluntary basis, must be prepared with reference to the **LCA (Life Cycle Assessment)** which is an analytical and systematic methodology that assesses the environmental significance of a product or service throughout its entire life cycle. LCA is the methodology that serves as the technical basis for a **wide range of possible actions aimed at increasing the sustainability of products**, as it helps to understand the impact generated towards the environment by products. The PCR (Product Category Rules) contain the rules for conducting the LCA, which must also comply with the international standard EN 15804 for construction products. This EPD refers to **Ducotone Smalti all'Acqua** line.



The Duco Brand



On the market since **1928**, **Duco** is the reference brand for all painting professionals, offering effective solutions through a range of quality products.

Duco offers a complete range of high-quality **water-based paints, enamels and wood protection products** to meet the requirements of the professional user at 360°.

Experience, quality, innovation and excellence: these are the success secrets of a '100% Made in Italy' brand.

Duco, solutions for painters.

90 years of history
make **Duco**
the reference brand
for all professionals
painters





The Dulox Extreme Brillante product

Dulox Extreme Brillante is an innovative high-performance water-based polyurethane alkyd resin enamel. The Shield Blocking System technology guarantees exceptional strength, elasticity and durability. Suitable for application on iron, aluminium, galvanised sheet metal, PVC, glass and wood.



CHEMICAL COMPOSITION

	DULOX EXTREME BRILLANTE
Emulsions	< 65
Additives	< 15
Loads	< 30
Water	< 10



BARRIER AGAINST DIRT AND GREASE



EXTREME COVERAGE



EXCELLENT ADHESION








SCRATCH AND IMPACT RESISTANCE

PRODUCT	PACKAGING VOLUME [L]	PP [kg/kg]	Steel [kg/kg]	Paper [kg/kg]	LDPE [kg/kg]	Wood [kg/kg]
Dulox Extreme Brillante	0.75	1.03E-02	1.32E-01	2.05E-03	1.47E-02	1.00E-01
	2.5	3.69E-03	1.00E-01	6.15E-04	1.12E-02	6.00E-02

DULOX EXTREME BRILLANTE		
TECHNICAL DATA	METHOD	MAIN DATA AT 20°C AND 60% RELATIVE HUMIDITY
Kubelka-Munk Yield	ISO 6504/1	18 m ² /l
Climatic agents	EN 11507/EN 927-6	1500 h



																
Production			Distribution & installation		Use & maintenance							End-of-life & disposal				Reuse & recycling
Raw materials	Transport	Production	Transport	Installation	Use	Maintenance	Repair	Replacement	Renovation	Energy performance	Water consumption	Demolition (total/partial)	Transport (landfill, recovery centre)	Recovery/reuse	Landfill	Recovery/reuse potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
EU	I	I	-	-	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
>90%					-	-	-	-	-	-	-	-	-	-	-	-
Less than +10% for each product group					-	-	-	-	-	-	-	-	-	-	-	-
Not relevant					-	-	-	-	-	-	-	-	-	-	-	-

Environmental Declaration Process

DECLARED UNIT

For this EPD, in accordance with the reference standards, the concept of “declared unit” is used instead of “functional unit”. The declared unit is the quantity of product required to produce 1 kg of finished product.

REFERENCE YEAR

The data used refer to the calendar year 2020. Study carried out in 2021.

SYSTEM BOUNDARIES

This EPD is of the “cradle to gate with options” type and includes forms A1 (Raw Materials), A2 (Transport), A3 (Production), C1 (Total/Partial Demolition), C2 (Landfill/Recovery Transport), C3 (Recovery/Reuse Process), C4 (Landfill) and D (Recovery/Reuse Potential).



Environmental Performance

DULOX EXTREME BRILLANTE ENVIRONMENTAL CALCULATION SIMULATION

EN15804 + A2 Indicators

Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP	kg CO ₂ eq	2.23E+03	0.00E+00	9.68E-01	0.00E+00
GWP - Fossil	kg CO ₂ eq	2.20E+03	0.00E+00	5.77E-02	0.00E+00
GWP - Biogenic	kg CO ₂ eq	2.64E+01	0.00E+00	9.10E-01	0.00E+00
GWP - Land use and LU change	kg CO ₂ eq	1.50E+00	0.00E+00	1.08E-05	0.00E+00
ODP	kg CFC11 eq	2.82E-04	0.00E+00	8.48E-09	0.00E+00
IRP	kBq U-235 eq	1.09E+02	0.00E+00	2.85E-03	0.00E+00
POCP	kg NMVOC eq	8.74E+00	0.00E+00	2.46E-03	0.00E+00
PM	disease inc.	1.67E-04	0.00E+00	2.74E-08	0.00E+00
AP	mol H+ eq	1.17E+01	0.00E+00	1.01E-03	0.00E+00
EP, freshwater	kg P eq	6.25E-01	0.00E+00	5.59E-06	0.00E+00
EP, marine	kg N eq	3.39E+00	0.00E+00	4.80E-04	0.00E+00
EP, terrestrial	mol N eq	2.34E+01	0.00E+00	5.22E-03	0.00E+00
ETP, freshwater	CTUe	1.68E+05	0.00E+00	3.12E+00	0.00E+00
ETP, freshwater - organics	CTUe	4.70E+04	0.00E+00	3.99E-01	0.00E+00
ETP, freshwater - inorganics	CTUe	8.33E+04	0.00E+00	1.31E-01	0.00E+00
ETP, freshwater - metals	CTUe	3.73E+04	0.00E+00	2.59E+00	0.00E+00
LUP	Pt	6.66E+03	0.00E+00	5.98E-01	0.00E+00
WDP	m ³ depriv.	1.82E+03	0.00E+00	8.03E-03	0.00E+00
RUP, fossils	MJ	4.10E+04	0.00E+00	5.68E-01	0.00E+00
RUP, minerals and metals	kg Sb eq	2.29E-02	0.00E+00	1.12E-07	0.00E+00
HTP, non-cancer	CTUh	2.23E-04	0.00E+00	3.80E-08	0.00E+00
HTP, non-cancer - organics	CTUh	1.19E-05	0.00E+00	1.01E-09	0.00E+00
HTP, non-cancer - inorganics	CTUh	1.93E-04	0.00E+00	2.29E-08	0.00E+00
HTP, non-cancer - metals	CTUh	1.79E-05	0.00E+00	1.42E-08	0.00E+00
HTP, cancer	CTUh	2.31E-05	0.00E+00	6.97E-09	0.00E+00
HTP, cancer - organics	CTUh	2.22E-05	0.00E+00	6.83E-09	0.00E+00
HTP, cancer - inorganics	CTUh	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HTP, cancer - metals	CTUh	9.65E-07	0.00E+00	1.46E-10	0.00E+00

Environmental Performance DULOX EXTREME BRILLANTE ENVIRONMENTAL CALCULATION SIMULATION



Resource consumption					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
PENRT	MJ	4.39E+04	0.00E+00	6.04E-01	0.00E+00
PENRM	MJ	3.61E+03	0.00E+00	3.61E+03	0.00E+00
PENRE	MJ	7.60E-01	0.00E+00	9.42E-06	0.00E+00
PERT	MJ	2.38E+03	0.00E+00	6.92E-03	0.00E+00
PERM	MJ	1.39E+03	0.00E+00	1.94E-03	0.00E+00
PERE	MJ	9.86E+02	0.00E+00	4.98E-03	0.00E+00
ODP	kg CFC11 eq	2.82E-04	0.00E+00	8.48E-09	0.00E+00
WDP	m³	1.82E+03	0.00E+00	1.82E+03	0.00E+00



Waste					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
HWD	kg	2.95E-02	0.00E+00	5.50E-03	0.00E+00
NWHD	kg	1.77E+02	0.00E+00	1.01E+00	0.00E+00
RWD	kg	5.23E-02	0.00E+00	3.84E-06	0.00E+00
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	1.87E-01	0.00E+00
MER	kg	0.00E+00	0.00E+00	5.88E-01	0.00E+00
EE	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00



IPCC Indicator					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP-GHG	kg CO ₂ eq	2.12E+03	0.00E+00	1.44E-01	0.00E+00



The Dulox Extreme Satinato product

Dulox Extreme Satinato is an innovative high-performance water-based polyurethane alkyd resin enamel. The Shield Blocking System technology guarantees exceptional resistance, elasticity and durability. Suitable for application on iron, aluminium, galvanised sheet metal, PVC, glass and wood.



CHEMICAL COMPOSITION

	DULOX EXTREME BRILLANTE
Emulsions	< 65
Additives	< 15
Loads	< 30
Water	< 10



BARRIER AGAINST DIRT AND GREASE



EXTREME COVERAGE



EXCELLENT ADHESION








SCRATCH AND IMPACT RESISTANCE

PRODUCT	PACKAGING VOLUME [L]	PP [kg/kg]	Steel [kg/kg]	Paper [kg/kg]	LDPE [kg/kg]	Wood [kg/kg]
Dulox Extreme Satinato	0.75	0.00E+00	1.30E-01	2.02E-03	1.11E-02	7.58E-02
	2.5	4.80E-03	9.88E-02	6.06E-04	8.48E-03	4.55E-02

DULOX EXTREME SATINATO

TECHNICAL DATA	METHOD	MAIN DATA AT 20°C AND 60% RELATIVE HUMIDITY
Kubelka-Munk Yield	ISO 6504/1	16 m ² /l
Climatic agents	EN 11507/EN 927-6	1500 h



																
Production			Distribution & installation		Use & maintenance							End-of-life & disposal				Reuse & recycling
Raw materials	Transport	Production	Transport	Installation	Use	Maintenance	Repair	Replacement	Renovation	Energy performance	Water consumption	Demolition (total/partial)	Transport (landfill, recovery centre)	Recovery/reuse	Landfill	Recovery/reuse potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
EU	I	I	-	-	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
>90%					-	-	-	-	-	-	-	-	-	-	-	-
Less than +10% for each product group					-	-	-	-	-	-	-	-	-	-	-	-
Not relevant					-	-	-	-	-	-	-	-	-	-	-	-

Environmental Declaration Process

DECLARED UNIT

For this EPD, in accordance with the reference standards, the concept of “declared unit” is used instead of “functional unit”. The declared unit is the quantity of product required to produce 1 kg of finished product.

REFERENCE YEAR

The data used refer to the calendar year 2020. Study carried out in 2021.

SYSTEM BOUNDARIES

This EPD is of the “cradle to gate with options” type and includes forms A1 (Raw Materials), A2 (Transport), A3 (Production), C1 (Total/Partial Demolition), C2 (Landfill/Recovery Transport), C3 (Recovery/Reuse Process), C4 (Landfill) and D (Recovery/Reuse Potential).

Environmental Performance

DULOX EXTREME SATINATO ENVIRONMENTAL CALCULATION SIMULATION

EN15804 + A2 Indicators

Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP	kg CO ₂ eq	2.98E+03	0.00E+00	9.68E-01	0.00E+00
GWP - Fossil	kg CO ₂ eq	2.94E+03	0.00E+00	5.77E-02	0.00E+00
GWP - Biogenic	kg CO ₂ eq	3.55E+01	0.00E+00	9.10E-01	0.00E+00
GWP - Land use and LU change	kg CO ₂ eq	1.59E+00	0.00E+00	1.08E-05	0.00E+00
ODP	kg CFC11 eq	3.71E-04	0.00E+00	8.48E-09	0.00E+00
IRP	kBq U-235 eq	1.46E+02	0.00E+00	2.85E-03	0.00E+00
POCP	kg NMVOC eq	1.17E+01	0.00E+00	2.46E-03	0.00E+00
PM	disease inc.	2.23E-04	0.00E+00	2.74E-08	0.00E+00
AP	mol H+ eq	1.56E+01	0.00E+00	1.01E-03	0.00E+00
EP, freshwater	kg P eq	8.34E-01	0.00E+00	5.59E-06	0.00E+00
EP, marine	kg N eq	4.52E+00	0.00E+00	4.80E-04	0.00E+00
EP, terrestrial	mol N eq	3.12E+01	0.00E+00	5.22E-03	0.00E+00
ETP, freshwater	CTUe	2.24E+05	0.00E+00	3.12E+00	0.00E+00
ETP, freshwater - organics	CTUe	6.28E+04	0.00E+00	3.99E-01	0.00E+00
ETP, freshwater - inorganics	CTUe	1.11E+05	0.00E+00	1.31E-01	0.00E+00
ETP, freshwater - metals	CTUe	4.98E+04	0.00E+00	2.59E+00	0.00E+00
LUP	Pt	8.15E+03	0.00E+00	5.98E-01	0.00E+00
WDP	m ³ depriv.	2.42E+03	0.00E+00	8.04E-03	0.00E+00
RUP, fossils	MJ	5.47E+04	0.00E+00	5.68E-01	0.00E+00
RUP, minerals and metals	kg Sb eq	3.06E-02	0.00E+00	1.12E-07	0.00E+00
HTP, non-cancer	CTUh	2.97E-04	0.00E+00	3.80E-08	0.00E+00
HTP, non-cancer - organics	CTUh	1.59E-05	0.00E+00	1.01E-09	0.00E+00
HTP, non-cancer - inorganics	CTUh	2.58E-04	0.00E+00	2.29E-08	0.00E+00
HTP, non-cancer - metals	CTUh	2.39E-05	0.00E+00	1.42E-08	0.00E+00
HTP, cancer	CTUh	3.09E-05	0.00E+00	6.97E-09	0.00E+00
HTP, cancer - organics	CTUh	2.96E-05	0.00E+00	6.83E-09	0.00E+00
HTP, cancer - inorganics	CTUh	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HTP, cancer - metals	CTUh	1.28E-06	0.00E+00	1.46E-10	0.00E+00

Environmental Performance

DULOX EXTREME SATINATO ENVIRONMENTAL CALCULATION SIMULATION



Resource consumption					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
PENRT	MJ	5.86E+04	0.00E+00	6.03E-01	0.00E+00
PENRM	MJ	4.82E+03	0.00E+00	4.82E+03	0.00E+00
PENRE	MJ	4.07E-01	0.00E+00	9.41E-06	0.00E+00
PERT	MJ	3.04E+03	0.00E+00	6.91E-03	0.00E+00
PERM	MJ	1.72E+03	0.00E+00	1.94E-03	0.00E+00
PERE	MJ	1.32E+03	0.00E+00	4.97E-03	0.00E+00
ODP	kg CFC11 eq	0.00E+00	0.00E+00	0.00E+00	0.00E+00
WDP	m³	0.00E+00	0.00E+00	2.45E-02	0.00E+00



Waste					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
HWD	kg	3.93E-02	0.00E+00	5.50E-03	0.00E+00
NWHD	kg	2.36E+02	0.00E+00	1.01E+00	0.00E+00
RWD	kg	6.98E-02	0.00E+00	3.84E-06	0.00E+00
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	1.87E-01	0.00E+00
MER	kg	0.00E+00	0.00E+00	5.88E-01	0.00E+00
EE	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00



IPCC Indicator					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP-GHG	kg CO ₂ eq	2.83E+03	0.00E+00	1.44E-01	0.00E+00

The Dulox Extreme Fondo product

Dulox Extreme Fondo is an innovative water-based polyurethane alkyd primer specifically for difficult substrates. Its high anti-corrosive power and excellent adhesion to the substrate make it ideal for indoor and outdoor protection of iron, galvanised sheet metal, aluminium, PVC, glass, and suitably treated wood.



CHEMICAL COMPOSITION

	DULOX EXTREME FONDO
Emulsions	< 60
Additives	< 10
Loads	< 20
Water	< 30



HIGH ADHESION



ANTI-CORROSIVE








IDEAL FOR DIFFICULT SUBSTRATES



A+ FORMULA

PRODUCT	PACKAGING VOLUME [L]	PP [kg/kg]	Steel [kg/kg]	Paper [kg/kg]	LDPE [kg/kg]	Wood [kg/kg]
Dulox Extreme Fondo	0.75	1.17E-02	1.51E-01	2.34E-03	4.28E-01	8.77E-02
	2.5	4.21E-03	1.14E-01	7.02E-04	4.28E+00	5.26E-02



																
Production			Distribution & installation		Use & maintenance							End-of-life & disposal				Reuse & recycling
Raw materials	Transport	Production	Transport	Installation	Use	Maintenance	Repair	Replacement	Renovation	Energy performance	Water consumption	Demolition (total/partial)	Transport (landfill, recovery centre)	Recovery/reuse	Landfill	Recovery/reuse potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
EU	I	I	-	-	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
>90%					-	-	-	-	-	-	-	-	-	-	-	-
Less than +10% for each product group					-	-	-	-	-	-	-	-	-	-	-	-
Not relevant					-	-	-	-	-	-	-	-	-	-	-	-

Environmental Declaration Process

DECLARED UNIT

For this EPD, in accordance with the reference standards, the concept of “**declared unit**” is used instead of “functional unit”. The declared unit is the quantity of product required to produce 1 kg of finished product.

REFERENCE YEAR

The data used refer to the calendar year 2020. Study carried out in 2021.

SYSTEM BOUNDARIES

This EPD is of the “cradle to gate with options” type and includes forms A1 (Raw Materials), A2 (Transport), A3 (Production), C1 (Total/Partial Demolition), C2 (Landfill/Recovery Transport), C3 (Recovery/Reuse Process), C4 (Landfill) and D (Recovery/Reuse Potential).

Environmental Performance

DULOX EXTREME FONDO ENVIRONMENTAL CALCULATION SIMULATION

EN15804 + A2 Indicators					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP	kg CO ₂ eq	3.10E+03	0.00E+00	9.68E-01	0.00E+00
GWP - Fossil	kg CO ₂ eq	3.06E+03	0.00E+00	5.73E-02	0.00E+00
GWP - Biogenic	kg CO ₂ eq	3.69E+01	0.00E+00	9.10E-01	0.00E+00
GWP - Land use and LU change	kg CO ₂ eq	1.66E+00	0.00E+00	1.07E-05	0.00E+00
ODP	kg CFC11 eq	3.89E-04	0.00E+00	8.37E-09	0.00E+00
IRP	kBq U-235 eq	1.52E+02	0.00E+00	2.82E-03	0.00E+00
POCP	kg NMVOC eq	1.21E+01	0.00E+00	2.46E-03	0.00E+00
PM	disease inc.	2.32E-04	0.00E+00	2.74E-08	0.00E+00
AP	mol H+ eq	1.63E+01	0.00E+00	1.01E-03	0.00E+00
EP, freshwater	kg P eq	8.67E-01	0.00E+00	5.56E-06	0.00E+00
EP, marine	kg N eq	4.71E+00	0.00E+00	4.80E-04	0.00E+00
EP, terrestrial	mol N eq	3.25E+01	0.00E+00	5.21E-03	0.00E+00
ETP, freshwater	CTUe	2.33E+05	0.00E+00	3.12E+00	0.00E+00
ETP, freshwater - organics	CTUe	6.52E+04	0.00E+00	3.99E-01	0.00E+00
ETP, freshwater - inorganics	CTUe	1.16E+05	0.00E+00	1.30E-01	0.00E+00
ETP, freshwater - metals	CTUe	5.18E+04	0.00E+00	2.59E+00	0.00E+00
LUP	Pt	8.40E+03	0.00E+00	5.89E-01	0.00E+00
WDP	m ³ depriv.	2.52E+03	0.00E+00	7.91E-03	0.00E+00
RUP, fossils	MJ	5.69E+04	0.00E+00	5.61E-01	0.00E+00
RUP, minerals and metals	kg Sb eq	3.19E-02	0.00E+00	1.11E-07	0.00E+00
HTP, non-cancer	CTUh	3.09E-04	0.00E+00	3.80E-08	0.00E+00
HTP, non-cancer - organics	CTUh	1.65E-05	0.00E+00	1.01E-09	0.00E+00
HTP, non-cancer - inorganics	CTUh	2.68E-04	0.00E+00	2.29E-08	0.00E+00
HTP, non-cancer - metals	CTUh	2.50E-05	0.00E+00	1.42E-08	0.00E+00
HTP, cancer	CTUh	3.21E-05	0.00E+00	6.97E-09	0.00E+00
HTP, cancer - organics	CTUh	3.07E-05	0.00E+00	6.83E-09	0.00E+00
HTP, cancer - inorganics	CTUh	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HTP, cancer - metals	CTUh	1.34E-06	0.00E+00	1.46E-10	0.00E+00

Environmental Performance

DULOX EXTREME FONDO ENVIRONMENTAL CALCULATION SIMULATION



Resource consumption					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
PENRT	MJ	6.10E+04	0.00E+00	5.96E-01	0.00E+00
PENRM	MJ	5.01E+03	0.00E+00	5.01E+03	0.00E+00
PENRE	MJ	4.22E-01	0.00E+00	9.30E-06	0.00E+00
PERT	MJ	3.15E+03	0.00E+00	6.83E-03	0.00E+00
PERM	MJ	1.78E+03	0.00E+00	1.91E-03	0.00E+00
PERE	MJ	1.37E+03	0.00E+00	4.92E-03	0.00E+00
ODP	kg CFC11 eq	0.00E+00	0.00E+00	0.00E+00	0.00E+00
WDP	m³	0.00E+00	0.00E+00	2.45E-02	0.00E+00



Waste					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
HWD	kg	4.09E-02	0.00E+00	5.50E-03	0.00E+00
NWHD	kg	2.46E+02	0.00E+00	9.91E-01	0.00E+00
RWD	kg	7.26E-02	0.00E+00	3.79E-06	0.00E+00
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	1.87E-01	0.00E+00
MER	kg	0.00E+00	0.00E+00	5.88E-01	0.00E+00
EE	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00



IPCC Indicator					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP-GHG	kg CO ₂ eq	2.94E+03	0.00E+00	1.44E-01	0.00E+00



Dulox all'Acqua Brillante product

Dulox Water-Bright is a water-based multi-substrate acrylic enamel formulated with special lightfast pigments. Ideal for the protection and decoration of iron, galvanised sheet metal, plastic, wood and other difficult substrates.



CHEMICAL COMPOSITION

	DULOX ALL'ACQUA BRILLANTE
Emulsions	< 60
Additives	< 20
Loads	< 30
Water	< 10



QUICK DRYING



HIGH COVERAGE



HACCP CERTIFIED








A+ FORMULA

PRODUCT	PACKAGING VOLUME [L]	PP [kg/kg]	Steel [kg/kg]	Paper [kg/kg]	LDPE [kg/kg]	Wood [kg/kg]
Dulox all'Acqua Brillante	0.375	8.53E-03	2.30E-01	4.27E-03	2.35E-02	1.60E-01
	0.75	5.33E-03	1.38E-01	2.13E-03	1.17E-02	8.00E-02
	2.5	3.84E-03	1.04E-01	6.40E-04	8.96E-03	4.80E-02

DULOX ALL'ACQUA BRILLANTE		
TECHNICAL DATA	METHOD	MAIN DATA AT 20°C AND 60% RELATIVE HUMIDITY
Kubelka-Munk Yield	ISO 6504/1	12 m²/l
Climatic agents	EN 11507/EN 927-6	1500 h



																
Production			Distribution & installation		Use & maintenance							End-of-life & disposal				Reuse & recycling
Raw materials	Transport	Production	Transport	Installation	Use	Maintenance	Repair	Replacement	Renovation	Energy performance	Water consumption	Demolition (total/partial)	Transport (landfill, recovery centre)	Recovery/reuse	Landfill	Recovery/reuse potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
EU	I	I	-	-	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
>90%					-	-	-	-	-	-	-	-	-	-	-	-
Less than +10% for each product group					-	-	-	-	-	-	-	-	-	-	-	-
Not relevant					-	-	-	-	-	-	-	-	-	-	-	-

Environmental Declaration Process

DECLARED UNIT

For this EPD, in accordance with the reference standards, the concept of “declared unit” is used instead of “functional unit”. The declared unit is the quantity of product required to produce 1 kg of finished product.

REFERENCE YEAR

The data used refer to the calendar year 2020. Study carried out in 2021.

SYSTEM BOUNDARIES

This EPD is of the “cradle to gate with options” type and includes forms A1 (Raw Materials), A2 (Transport), A3 (Production), C1 (Total/Partial Demolition), C2 (Landfill/Recovery Transport), C3 (Recovery/Reuse Process), C4 (Landfill) and D (Recovery/Reuse Potential).



Environmental Performance

DULOX ALL'ACQUA BRILLANTE ENVIRONMENTAL CALCULATION SIMULATION

EN15804 + A2 Indicators					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP	kg CO ₂ eq	8.56E+00	0.00E+00	9.68E-01	0.00E+00
GWP - Fossil	kg CO ₂ eq	8.47E+00	0.00E+00	5.78E-02	0.00E+00
GWP - Biogenic	kg CO ₂ eq	5.97E-02	0.00E+00	9.10E-01	0.00E+00
GWP - Land use and LU change	kg CO ₂ eq	2.82E-02	0.00E+00	1.09E-05	0.00E+00
ODP	kg CFC11 eq	7.17E-06	0.00E+00	8.52E-09	0.00E+00
IRP	kBq U-235 eq	6.98E-01	0.00E+00	2.87E-03	0.00E+00
POCP	kg NMVOC eq	3.81E-02	0.00E+00	2.46E-03	0.00E+00
PM	disease inc.	5.00E-07	0.00E+00	2.74E-08	0.00E+00
AP	mol H+ eq	3.92E-02	0.00E+00	1.01E-03	0.00E+00
EP, freshwater	kg P eq	2.72E-03	0.00E+00	5.60E-06	0.00E+00
EP, marine	kg N eq	9.53E-03	0.00E+00	4.81E-04	0.00E+00
EP, terrestrial	mol N eq	9.09E-02	0.00E+00	5.22E-03	0.00E+00
ETP, freshwater	CTUe	2.01E+02	0.00E+00	3.13E+00	0.00E+00
ETP, freshwater - organics	CTUe	1.07E+01	0.00E+00	3.99E-01	0.00E+00
ETP, freshwater - inorganics	CTUe	5.26E+01	0.00E+00	1.32E-01	0.00E+00
ETP, freshwater - metals	CTUe	1.38E+02	0.00E+00	2.59E+00	0.00E+00
LUP	Pt	2.14E+03	0.00E+00	6.01E-01	0.00E+00
WDP	m ³ depriv.	4.29E+00	0.00E+00	8.09E-03	0.00E+00
RUP, fossils	MJ	1.31E+02	0.00E+00	5.71E-01	0.00E+00
RUP, minerals and metals	kg Sb eq	3.59E-05	0.00E+00	1.13E-07	0.00E+00
HTP, non-cancer	CTUh	2.37E-07	0.00E+00	3.80E-08	0.00E+00
HTP, non-cancer - organics	CTUh	5.76E-09	0.00E+00	1.01E-09	0.00E+00
HTP, non-cancer - inorganics	CTUh	1.63E-07	0.00E+00	2.29E-08	0.00E+00
HTP, non-cancer - metals	CTUh	7.00E-08	0.00E+00	1.42E-08	0.00E+00
HTP, cancer	CTUh	3.66E-08	0.00E+00	6.97E-09	0.00E+00
HTP, cancer - organics	CTUh	9.84E-09	0.00E+00	6.83E-09	0.00E+00
HTP, cancer - inorganics	CTUh	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HTP, cancer - metals	CTUh	2.68E-08	0.00E+00	1.46E-10	0.00E+00

Environmental Performance DULOX ALL'ACQUA BRILLANTE ENVIRONMENTAL CALCULATION SIMULATION



Resource consumption					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
PENRT	MJ	1.40E+02	0.00E+00	6.06E-01	0.00E+00
PENRM	MJ	1.21E+01	0.00E+00	1.21E+01	0.00E+00
PENRE	MJ	3.46E-02	0.00E+00	9.45E-06	0.00E+00
PERT	MJ	3.97E+02	0.00E+00	6.94E-03	0.00E+00
PERM	MJ	3.93E+02	0.00E+00	1.95E-03	0.00E+00
PERE	MJ	4.18E+00	0.00E+00	5.00E-03	0.00E+00
ODP	kg CFC11 eq	0.00E+00	0.00E+00	0.00E+00	0.00E+00
WDP	m³	0.00E+00	0.00E+00	2.45E-02	0.00E+00



Waste					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
HWD	kg	2.05E-04	0.00E+00	5.50E-03	0.00E+00
NWHD	kg	2.40E+00	0.00E+00	1.02E+00	0.00E+00
RWD	kg	3.58E-04	0.00E+00	3.86E-06	0.00E+00
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	1.87E-01	0.00E+00
MER	kg	0.00E+00	0.00E+00	5.88E-01	0.00E+00
EE	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00



IPCC indicator					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP-GHG	kg CO ₂ eq	8.21E+00	0.00E+00	1.44E-01	0.00E+00



Dulox all'Acqua Satinato product

Dulox all'acqua Satinato is a water-based multi-substrate acrylic enamel formulated with special lightfast pigments. Ideal for the protection and decoration of iron, galvanised sheet metal, plastic, wood and other difficult substrates.



CHEMICAL COMPOSITION

	DULOX ALL'ACQUA SATINATO
Emulsions	< 50
Additives	< 20
Loads	< 30
Water	< 20



QUICK DRYING



HIGH COVERAGE



HACCP CERTIFIED








A+ FORMULA

PRODUCT	PACKAGING VOLUME [L]	PP [kg/kg]	Steel [kg/kg]	Paper [kg/kg]	LDPE [kg/kg]	Wood [kg/kg]
Dulox all'Acqua Satinato	0.375	0.00E+00	2.22E-01	4.10E-03	2.26E-02	1.54E-01
	0.75	0.00E+00	1.32E-01	2.05E-03	1.13E-02	7.69E-02
	2.5	3.69E-03	1.00E-01	6.15E-04	8.62E-03	4.62E-02

DULOX ALL'ACQUA SATINATO		
TECHNICAL DATA	METHOD	MAIN DATA AT 20°C AND 60% RELATIVE HUMIDITY
Kubelka-Munk Yield	ISO 6504/1	10 m ² /l
Climatic agents	EN 11507/EN 927-6	1500 h



																
Production			Distribution & installation		Use & maintenance							End-of-life & disposal				Reuse & recycling
Raw materials	Transport	Production	Transport	Installation	Use	Maintenance	Repair	Replacement	Renovation	Energy performance	Water consumption	Demolition (total/partial)	Transport (landfill, recovery centre)	Recovery/reuse	Landfill	Recovery/reuse potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
EU	I	I	-	-	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
>90%					-	-	-	-	-	-	-	-	-	-	-	-
Less than +10% for each product group					-	-	-	-	-	-	-	-	-	-	-	-
Not relevant					-	-	-	-	-	-	-	-	-	-	-	-

Environmental Declaration Process

DECLARED UNIT

For this EPD, in accordance with the reference standards, the concept of “declared unit” is used instead of “functional unit”. The declared unit is the quantity of product required to produce 1 kg of finished product.

REFERENCE YEAR

The data used refer to the calendar year 2020. Study carried out in 2021.

SYSTEM BOUNDARIES

This EPD is of the “cradle to gate with options” type and includes forms A1 (Raw Materials), A2 (Transport), A3 (Production), C1 (Total/Partial Demolition), C2 (Landfill/Recovery Transport), C3 (Recovery/Reuse Process), C4 (Landfill) and D (Recovery/Reuse Potential).

Environmental Performance

DULOX ALL'ACQUA SATINATO ENVIRONMENTAL CALCULATION SIMULATION

EN15804 + A2 Indicators

Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP	kg CO ₂ eq	7.87E+00	0.00E+00	9.68E-01	0.00E+00
GWP - Fossil	kg CO ₂ eq	7.79E+00	0.00E+00	5.77E-02	0.00E+00
GWP - Biogenic	kg CO ₂ eq	5.31E-02	0.00E+00	9.10E-01	0.00E+00
GWP - Land use and LU change	kg CO ₂ eq	2.80E-02	0.00E+00	1.08E-05	0.00E+00
ODP	kg CFC11 eq	3.93E-06	0.00E+00	8.48E-09	0.00E+00
IRP	kBq U-235 eq	6.67E-01	0.00E+00	2.85E-03	0.00E+00
POCP	kg NMVOC eq	3.61E-02	0.00E+00	2.46E-03	0.00E+00
PM	disease inc.	4.74E-07	0.00E+00	2.74E-08	0.00E+00
AP	mol H+ eq	3.69E-02	0.00E+00	1.01E-03	0.00E+00
EP, freshwater	kg P eq	2.61E-03	0.00E+00	5.59E-06	0.00E+00
EP, marine	kg N eq	9.12E-03	0.00E+00	4.80E-04	0.00E+00
EP, terrestrial	mol N eq	8.63E-02	0.00E+00	5.22E-03	0.00E+00
ETP, freshwater	CTUe	1.80E+02	0.00E+00	3.12E+00	0.00E+00
ETP, freshwater - organics	CTUe	1.22E+01	0.00E+00	3.99E-01	0.00E+00
ETP, freshwater - inorganics	CTUe	4.24E+01	0.00E+00	1.31E-01	0.00E+00
ETP, freshwater - metals	CTUe	1.25E+02	0.00E+00	2.59E+00	0.00E+00
LUP	Pt	2.14E+03	0.00E+00	5.98E-01	0.00E+00
WDP	m ³ depriv.	3.00E+00	0.00E+00	8.04E-03	0.00E+00
RUP, fossils	MJ	1.19E+02	0.00E+00	5.68E-01	0.00E+00
RUP, minerals and metals	kg Sb eq	3.45E-05	0.00E+00	1.12E-07	0.00E+00
HTP, non-cancer	CTUh	2.26E-07	0.00E+00	3.80E-08	0.00E+00
HTP, non-cancer - organics	CTUh	5.93E-09	0.00E+00	1.01E-09	0.00E+00
HTP, non-cancer - inorganics	CTUh	1.53E-07	0.00E+00	2.29E-08	0.00E+00
HTP, non-cancer - metals	CTUh	6.80E-08	0.00E+00	1.42E-08	0.00E+00
HTP, cancer	CTUh	3.66E-08	0.00E+00	6.97E-09	0.00E+00
HTP, cancer - organics	CTUh	1.01E-08	0.00E+00	6.83E-09	0.00E+00
HTP, cancer - inorganics	CTUh	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HTP, cancer - metals	CTUh	2.65E-08	0.00E+00	1.46E-10	0.00E+00

Environmental Performance **DULOX ALL'ACQUA SATINATO ENVIRONMENTAL CALCULATION SIMULATION**



Resource consumption					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
PENRT	MJ	1.27E+02	0.00E+00	6.04E-01	0.00E+00
PENRM	MJ	1.12E+01	0.00E+00	1.12E+01	0.00E+00
PENRE	MJ	3.46E-02	0.00E+00	9.41E-06	0.00E+00
PERT	MJ	3.97E+02	0.00E+00	6.91E-03	0.00E+00
PERM	MJ	3.93E+02	0.00E+00	1.94E-03	0.00E+00
PERE	MJ	3.96E+00	0.00E+00	4.98E-03	0.00E+00
ODP	kg CFC11 eq	0.00E+00	0.00E+00	0.00E+00	0.00E+00
WDP	m³	0.00E+00	0.00E+00	2.45E-02	0.00E+00



Waste					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
HWD	kg	2.02E-04	0.00E+00	5.50E-03	0.00E+00
NWHD	kg	2.29E+00	0.00E+00	1.01E+00	0.00E+00
RWD	kg	3.46E-04	0.00E+00	3.84E-06	0.00E+00
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	-	0.00E+00
MER	kg	0.00E+00	0.00E+00	-	0.00E+00
EE	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00



IPCC indicator					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP-GHG	kg CO ₂ eq	7.55E+00	0.00E+00	1.44E-01	0.00E+00



Dulox all'Acqua Opaco product

Dulox Water-Bright is a water-based multi-substrate acrylic enamel formulated with special lightfast pigments. Ideal for the protection and decoration of iron, galvanised sheet metal, plastic, wood and other difficult substrates.



	DULOX ALL'ACQUA OPACO
Emulsions	< 45
Additives	< 15
Loads	< 35
Water	< 25



QUICK DRYING



HIGH COVERAGE



HACCP CERTIFIED








A+ FORMULA

PRODUCT	PACKAGING VOLUME [L]	PP [kg/kg]	Steel [kg/kg]	Paper [kg/kg]	LDPE [kg/kg]	Wood [kg/kg]
Dulox all'Acqua Opaco	0.375	7.84E-03	2.12E-01	3.92E-03	2.16E-02	1.47E-01
	0.75	4.90E-03	1.26E-01	1.96E-03	1.08E-02	7.35E-02
	2.5	3.53E-03	9.59E-02	5.88E-04	8.24E-03	4.41E-02

DULOX ALL'ACQUA OPACO		
TECHNICAL DATA	METHOD	MAIN DATA AT 20°C AND 60% RELATIVE HUMIDITY
Kubelka-Munk Yield	ISO 6504/1	10 m ² /l
Climatic agents	EN 11507/EN 927-6	1500 h



																
Production			Distribution & installation		Use & maintenance							End-of-life & disposal				Reuse & recycling
Raw materials	Transport	Production	Transport	Installation	Use	Maintenance	Repair	Replacement	Renovation	Energy performance	Water consumption	Demolition (total/partial)	Transport (landfill, recovery centre)	Recovery/reuse	Landfill	Recovery/reuse potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
EU	I	I	-	-	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
>90%					-	-	-	-	-	-	-	-	-	-	-	-
Less than +10% for each product group					-	-	-	-	-	-	-	-	-	-	-	-
Not relevant					-	-	-	-	-	-	-	-	-	-	-	-

Environmental Declaration Process

DECLARED UNIT

For this EPD, in accordance with the reference standards, the concept of “declared unit” is used instead of “functional unit”. The declared unit is the quantity of product required to produce 1 kg of finished product.

REFERENCE YEAR

The data used refer to the calendar year 2020. Study carried out in 2021.

SYSTEM BOUNDARIES

This EPD is of the “cradle to gate with options” type and includes forms A1 (Raw Materials), A2 (Transport), A3 (Production), C1 (Total/Partial Demolition), C2 (Landfill/Recovery Transport), C3 (Recovery/Reuse Process), C4 (Landfill) and D (Recovery/Reuse Potential).



Environmental Performance

DULOX ALL'ACQUA OPACO ENVIRONMENTAL CALCULATION SIMULATION

EN15804 + A2 Indicators					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP	kg CO ₂ eq	7.67E+00	0.00E+00	9.68E-01	0.00E+00
GWP - Fossil	kg CO ₂ eq	7.59E+00	0.00E+00	5.78E-02	0.00E+00
GWP - Biogenic	kg CO ₂ eq	5.08E-02	0.00E+00	9.10E-01	0.00E+00
GWP - Land use and LU change	kg CO ₂ eq	2.80E-02	0.00E+00	1.08E-05	0.00E+00
ODP	kg CFC11 eq	8.32E-06	0.00E+00	8.51E-09	0.00E+00
IRP	kBq U-235 eq	6.57E-01	0.00E+00	2.86E-03	0.00E+00
POCP	kg NMVOC eq	3.54E-02	0.00E+00	2.46E-03	0.00E+00
PM	disease inc.	4.59E-07	0.00E+00	2.74E-08	0.00E+00
AP	mol H+ eq	3.59E-02	0.00E+00	1.01E-03	0.00E+00
EP, freshwater	kg P eq	2.56E-03	0.00E+00	5.60E-06	0.00E+00
EP, marine	kg N eq	8.81E-03	0.00E+00	4.81E-04	0.00E+00
EP, terrestrial	mol N eq	8.44E-02	0.00E+00	5.22E-03	0.00E+00
ETP, freshwater	CTUe	2.03E+02	0.00E+00	3.12E+00	0.00E+00
ETP, freshwater - organics	CTUe	7.09E+00	0.00E+00	3.99E-01	0.00E+00
ETP, freshwater - inorganics	CTUe	3.62E+01	0.00E+00	1.32E-01	0.00E+00
ETP, freshwater - metals	CTUe	1.60E+02	0.00E+00	2.59E+00	0.00E+00
LUP	Pt	2.14E+03	0.00E+00	6.00E-01	0.00E+00
WDP	m ³ depriv.	2.99E+00	0.00E+00	8.07E-03	0.00E+00
RUP, fossils	MJ	1.14E+02	0.00E+00	5.70E-01	0.00E+00
RUP, minerals and metals	kg Sb eq	3.29E-05	0.00E+00	1.13E-07	0.00E+00
HTP, non-cancer	CTUh	2.15E-07	0.00E+00	3.80E-08	0.00E+00
HTP, non-cancer - organics	CTUh	4.42E-09	0.00E+00	1.01E-09	0.00E+00
HTP, non-cancer - inorganics	CTUh	1.32E-07	0.00E+00	2.29E-08	0.00E+00
HTP, non-cancer - metals	CTUh	7.89E-08	0.00E+00	1.42E-08	0.00E+00
HTP, cancer	CTUh	3.41E-08	0.00E+00	6.97E-09	0.00E+00
HTP, cancer - organics	CTUh	7.75E-09	0.00E+00	6.83E-09	0.00E+00
HTP, cancer - inorganics	CTUh	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HTP, cancer - metals	CTUh	2.64E-08	0.00E+00	1.46E-10	0.00E+00

Environmental Performance

DULOX ALL'ACQUA OPACO ENVIRONMENTAL CALCULATION SIMULATION



Resource consumption					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
PENRT	MJ	1.22E+02	0.00E+00	6.05E-01	0.00E+00
PENRM	MJ	1.09E+01	0.00E+00	1.08E+01	0.00E+00
PENRE	MJ	3.46E-02	0.00E+00	9.43E-06	0.00E+00
PERT	MJ	3.97E+02	0.00E+00	6.93E-03	0.00E+00
PERM	MJ	3.93E+02	0.00E+00	1.94E-03	0.00E+00
PERE	MJ	3.90E+00	0.00E+00	4.99E-03	0.00E+00
ODP	kg CFC11 eq	8.32E-06	0.00E+00	8.51E-09	0.00E+00
WDP	m ³	2.99E+00	0.00E+00	3.02E+00	0.00E+00



Waste					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
HWD	kg	1.99E-04	0.00E+00	5.50E-03	0.00E+00
NWHD	kg	2.31E+00	0.00E+00	1.01E+00	0.00E+00
RWD	kg	3.41E-04	0.00E+00	3.85E-06	0.00E+00
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	-	0.00E+00
MER	kg	0.00E+00	0.00E+00	-	0.00E+00
EE	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00



IPCC indicator					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP-GHG	kg CO ₂ eq	7.36E+00	0.00E+00	1.44E-01	0.00E+00



Dulox Fondo all'Acqua product

Dulox Fondo all'acqua is a water-based anti-rust primer formulated with specific pigments with a barrier effect against rust and iron corrosion. Ideal for iron, galvanised sheet metal, and aluminium.



CHEMICAL COMPOSITION

	DULOX FONDO ALL'ACQUA
Emulsions	< 60
Additives	< 10
Loads	< 20
Water	< 30



HIGH ADHESION



ANTI-CORROSIVE








QUICK DRYING



ACRYLIC FORMULA

PRODUCT	PACKAGING VOLUME [L]	PP [kg/kg]	Steel [kg/kg]	Paper [kg/kg]	LDPE [kg/kg]	Wood [kg/kg]
Dulox Fondo all'Acqua	0.5	0.00E+00	2.02E-01	3.54E-03	1.77E-02	1.33E-01
	2.5	4.25E-03	1.15E-01	7.08E-04	8.85E-03	5.31E-02



																
Production			Distribution & installation		Use & maintenance							End-of-life & disposal				Reuse & recycling
Raw materials	Transport	Production	Transport	Installation	Use	Maintenance	Repair	Replacement	Renovation	Energy performance	Water consumption	Demolition (total/partial)	Transport (landfill, recovery centre)	Recovery/reuse	Landfill	Recovery/reuse potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
EU	I	I	-	-	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
>90%					-	-	-	-	-	-	-	-	-	-	-	-
Less than +10% for each product group					-	-	-	-	-	-	-	-	-	-	-	-
Not relevant					-	-	-	-	-	-	-	-	-	-	-	-

Environmental Declaration Process

DECLARED UNIT

For this EPD, in accordance with the reference standards, the concept of “**declared unit**” is used instead of “functional unit”. The declared unit is the quantity of product required to produce 1 kg of finished product.

REFERENCE YEAR

The data used refer to the calendar year 2020. Study carried out in 2021.

SYSTEM BOUNDARIES

This EPD is of the “cradle to gate with options” type and includes forms A1 (Raw Materials), A2 (Transport), A3 (Production), C1 (Total/Partial Demolition), C2 (Landfill/Recovery Transport), C3 (Recovery/Reuse Process), C4 (Landfill) and D (Recovery/Reuse Potential).

Environmental Performance

DULOX FONDO ALL'ACQUA ENVIRONMENTAL CALCULATION SIMULATION

EN15804 + A2 Indicators

Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP	kg CO ₂ eq	1.31E+01	0.00E+00	9.68E-01	0.00E+00
GWP - Fossil	kg CO ₂ eq	1.30E+01	0.00E+00	5.77E-02	0.00E+00
GWP - Biogenic	kg CO ₂ eq	7.14E-02	0.00E+00	9.10E-01	0.00E+00
GWP - Land use and LU change	kg CO ₂ eq	3.16E-02	0.00E+00	1.08E-05	0.00E+00
ODP	kg CFC11 eq	5.01E-06	0.00E+00	8.50E-09	0.00E+00
IRP	kBq U-235 eq	1.09E+00	0.00E+00	2.86E-03	0.00E+00
POCP	kg NMVOC eq	4.91E-02	0.00E+00	2.46E-03	0.00E+00
PM	disease inc.	6.31E-07	0.00E+00	2.74E-08	0.00E+00
AP	mol H+ eq	5.78E-02	0.00E+00	1.01E-03	0.00E+00
EP, freshwater	kg P eq	4.26E-03	0.00E+00	5.60E-06	0.00E+00
EP, marine	kg N eq	2.16E-02	0.00E+00	4.81E-04	0.00E+00
EP, terrestrial	mol N eq	1.41E-01	0.00E+00	5.22E-03	0.00E+00
ETP, freshwater	CTUe	2.95E+02	0.00E+00	3.12E+00	0.00E+00
ETP, freshwater - organics	CTUe	7.48E+00	0.00E+00	3.99E-01	0.00E+00
ETP, freshwater - inorganics	CTUe	6.04E+01	0.00E+00	1.32E-01	0.00E+00
ETP, freshwater - metals	CTUe	2.27E+02	0.00E+00	2.59E+00	0.00E+00
LUP	Pt	2.16E+03	0.00E+00	5.99E-01	0.00E+00
WDP	m ³ depriv.	5.88E+00	0.00E+00	8.06E-03	0.00E+00
RUP, fossils	MJ	1.96E+02	0.00E+00	5.69E-01	0.00E+00
RUP, minerals and metals	kg Sb eq	9.46E-05	0.00E+00	1.12E-07	0.00E+00
HTP, non-cancer	CTUh	3.38E-07	0.00E+00	3.80E-08	0.00E+00
HTP, non-cancer - organics	CTUh	6.91E-09	0.00E+00	1.01E-09	0.00E+00
HTP, non-cancer - inorganics	CTUh	8.90E-08	0.00E+00	2.29E-08	0.00E+00
HTP, non-cancer - metals	CTUh	2.44E-07	0.00E+00	1.42E-08	0.00E+00
HTP, cancer	CTUh	4.37E-08	0.00E+00	6.97E-09	0.00E+00
HTP, cancer - organics	CTUh	8.81E-09	0.00E+00	6.83E-09	0.00E+00
HTP, cancer - inorganics	CTUh	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HTP, cancer - metals	CTUh	3.49E-08	0.00E+00	1.46E-10	0.00E+00

Environmental Performance

DULOX FONDO ALL'ACQUA ENVIRONMENTAL CALCULATION SIMULATION



Resource consumption					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
PENRT	MJ	2.10E+02	0.00E+00	6.04E-01	0.00E+00
PENRM	MJ	1.79E+01	0.00E+00	1.79E+01	0.00E+00
PENRE	MJ	3.54E-02	0.00E+00	9.43E-06	0.00E+00
PERT	MJ	4.01E+02	0.00E+00	6.92E-03	0.00E+00
PERM	MJ	3.94E+02	0.00E+00	1.94E-03	0.00E+00
PERE	MJ	6.94E+00	0.00E+00	4.98E-03	0.00E+00
ODP	kg CFC11 eq	0.00E+00	0.00E+00	0.00E+00	0.00E+00
WDP	m³	0.00E+00	0.00E+00	2.45E-02	0.00E+00



Waste					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
HWD	kg	2.96E-04	0.00E+00	5.50E-03	0.00E+00
NWHD	kg	4.01E+00	0.00E+00	1.01E+00	0.00E+00
RWD	kg	5.29E-04	0.00E+00	3.85E-06	0.00E+00
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	1.87E-01	0.00E+00
MER	kg	0.00E+00	0.00E+00	5.88E-01	0.00E+00
EE	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00



IPCC indicator					
Impact Category	Unit	A1 - A3	C1	C2 - C4	D
GWP-GHG	kg CO ₂ eq	1.27E+01	0.00E+00	1.44E-01	0.00E+00

Additional information

GREEN PUBLIC PROCUREMENT (GPP)

GREEN PUBLIC PROCUREMENT (GPP)

Minimum Environmental Criteria (MEC) for Constructions. **Minimum Environmental Criteria (MEC) are issued by the Ministry of the Environment** and concern specific purchase categories. They provide “environmental considerations”, linked to the different phases of tender procedures (subject of the contract, technical specifications, rewarding technical characteristics linked to the most economically advantageous tender, contract execution conditions) aimed at qualifying, from an environmental point of view, both supplies and procurements throughout the entire life cycle of the service/product.

THE PAINT PRODUCT COMPLIES WITH THE MEC BUILDING REGULATIONS IF IT MEETS THE TECHNICAL SPECIFICATIONS LISTED BELOW

1. EMISSION LIMITS

The manufacturer of Paints and Varnishes **must present documentation proving compliance with the emission limits indicated in the table**, verified by measuring the emissions of its products. This documentation will consist, for example, of a test report carried out by a third-party laboratory or, if the company has suitable instrumentation, in-house laboratory tests.

2.3 Technical specifications of the building*

2.3.5.5 Material emission*

EMISSION LIMIT (µm2)	
Benzene Trichloroethylene (trichloroethylene) di-2-ethylhexylphthalate (DEHP) Dibutyl phthalate (DBP)	1 (for each substance)
Total VOCs (22)	1500
Formaldehyde	<60
Acetaldehyde	<300
Toluene	<450
Tetrachloroethylene	<350
Xylene	<300
1,2,4-Trimethylbenzene	<1500
1,4-dichlorobenzene	<90
Ethylbenzene	<1000
2-Butoxyethanol	<1500
Styrene	<350

2. HAZARDOUS SUBSTANCES

The manufacturer of paints and varnishes **must submit a declaration of conformity of the legal representative, accompanied by the Safety Data Sheet (SDS)** of the product. In the event of substances with such classifications not appearing in the SDS, the SDS itself is sufficient documentation to demonstrate compliance with the specific criterion.

2.4.1.3 Hazardous substances*

None of the following must be added intentionally to the components, parts or materials used:

- Cadmium, lead, chromium VI, mercury, arsenic and selenium additives in concentrations exceeding 0.010% by weight.
- Substances identified as “Substances of Very High Concern” (SVHCs) according to Article 59 of Regulation (EC) No 1907/2006 at a concentration greater than 0.10% w/w;
- Substances or mixtures classified or classifiable with the following hazard statements:
 - as carcinogenic, mutagenic or toxic for reproduction in category 1A, 1B or 2 (H340, H350, H350i, H360, H360F, H360D, H360FD, H360Fd, H360Df, H341, H351, H361f, H361d, H361fd, H362);
 - for acute oral, dermal, inhalation toxicity in category 1, 2 or 3 (H300, H301, H310, H311, H330, H331);
 - as dangerous to the aquatic environment in category 1, 2 (H400, H410, H411);
 - as having specific target organ toxicity category 1 and 2 (H370, H371, H372, H373).

3. POSSESSION OF THE ECOLABEL BRANDS OR EQUIVALENT

The manufacturer of Paints and Varnishes **must present documentation declaring possession of the Ecolabel or an equivalent label**. Alternatively, it may present a type III environmental declaration (i.e., an EPD - Environmental Product Declaration).

2.4 Technical specifications of building components*

2.4.2 Specific criteria for building components*

2.4.2.11 Paints and varnishes*

Paint products must comply with the ecological and performance criteria of Decision 2014/312/EU2 as amended, on the awarding of the EU Ecolabel for paint products. Verification: the designer shall prescribe that in the procurement phase the contractor shall ensure compliance with the criterion by using products bearing either:

- the EU Ecolabel or equivalent;
- a Type III environmental declaration in accordance with EN 15804 and ISO 14025 demonstrating compliance with this criterion. This can be verified if the environmental declaration contains the specific information related to the criteria contained in the above-mentioned decisions. Evidence of compliance with this criterion must be submitted to the contracting authority during the execution of the works, in the manner specified in the relevant specifications.

* NB: for more details and insights please refer to the text of the MEC of 20 May 2017. The current reference text is the Decree of 11 October 2017, “Minimum Environmental Criteria for the contracting of design services and works for the new construction, renovation and maintenance of public buildings” (“Building MEC”) which amends the previous MEC, published in January 2017.

Additional information

ACRONYMS

ENVIRONMENTAL IMPACT

ADP = abiotic resource depletion potential;
AP = acidification potential;
EP = eutrophication potential;
GWP = global warming potential;
ODP = stratospheric ozone depletion potential;
POCP = tropospheric ozone creation potential;
WDP = water deprivation potential;
IRP = ionising radiation;
PM = particulate matter;
HTP = human toxicity;
ETP = ecotoxicity potential;
LUP = land use potential;
RUP = resource use potential.

RESOURCE CONSUMPTION

PERT = total use of renewable primary energy resources
PERM = use of renewable primary energy resources used as raw materials;
PERE = use of renewable primary energy excluding renewable primary energy used as raw materials;
PENRT = total use of non-renewable primary energy resources;
PENRM = use of non-renewable primary energy resources used as raw materials;
PENRE = use of non-renewable primary energy excluding non-renewable primary energy used as raw materials
SM = use of secondary material;
RSF = use of renewable secondary fuels;
NRSF = use of non-renewable secondary fuels;
FWT = total use of water.

WASTE PRODUCTION

HWD = hazardous waste disposed of;
NHWD = non-hazardous waste disposed of;
RWD = radioactive waste disposed of;
CRU = components for reuse;
MFR = materials for recycling;
MER = materials for energy recovery;
EE = exported energy

VERIFICATION & REGISTRATION

ISO standard ISO 21930 and CEN standard EN 15804 serves as the core Product Category Rules (PCR)

Product Category Rules (PCR):
 PCR 2019:14 Construction products, version 1.11

(PCR) review was conducted by: The Technical Committee of the International EPD® System.
 See www.environdec.com/TC for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile.
 The review panel may be contacted via the Secretariat www.environdec.com/contact

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

☒ External ☐ Internal covering
☒ EPD process certification ☐ EPD verification

Third-party verifier: Guido Croce

Procedure for follow-up during EPD validity involves third party verifier.
☐ Yes ☒ No

The holder of the EPD has ownership and responsibility for the declaration.

CPC CODE: 3511 paints, varnishes and related products.

BIBLIOGRAPHY

AIB - Association of Issuing Bodies (2020). European Residual Mixes - Results of the calculation of Residual Mixes for the calendar year 2019 (Version 1.1, 2020-09-08).
 CEWEP 2012, Confederation of European Waste-to-Energy Plants. Energy Report III (December 2012).
 De Ceuster, G., et al. (2009) TREMOVE: Final Report + Model code v2.7b, 2009.
 European Commission, Brussels.
 Ecoinvent Centre (2007) Ecoinvent data v2.0. Swiss Centre for Life Cycle Inventories, Dübendorf, Switzerland.
 EMEP/EEA air pollutant emission inventory guidebook 2016; '1.A.4 non-road mobile machinery'.
 IPCC, 2006. Guidelines for National Greenhouse Gas Inventories.
 ISPRA 2017, Istituto Superiore per la Protezione e la Ricerca Ambientale: Urban Waste reports, Edizione 2017; Reports 272/2017. ISBN 978-88-448-0852-5.
 Keller, M. et al. (2010) Handbook emission factors for road transport v3.1, HBEFA.
 INFRAS, Berne, CH.
 Knörr, W. et al. (2011) Ecological Transport Information Tool for Worldwide Transports (EcoTransIT): Methodology and data update. Berlin, Hannover, Heidelberg, DE.
 Ntziachristos, L., et al. (2013) EMEP/EEA air pollutant emissions inventory guidebook 2009:
 Exhaust emissions from road transport. European Environment Agency, Copenhagen, DK.
 Spielmann, M., et al. (2007) Transport Services. ecoinvent report No. 14, Swiss Centre for Life Cycle Inventories, Dübendorf, CH.
 From combustion of fuel in the engine. The dataset takes as input the infrastructure of the lorry and road network, the materials and efforts needed for maintenance of these and the fuel consumed in the vehicle for the journey. The activity ends with the transport service of 1tkm and the emissions of exhaust and non-exhaust emissions into air, water and soil.



Monday - Friday: 8.30 - 17.30
numero.verde@cromology.it

Cromology italia Spa

Via IV Novembre, 4 - 55016 Porcari (LU)
Tel. 199 119955 / Fax 199 119977

www.duco.it  [/duco.it](https://www.facebook.com/duco.it)