EPD

ENVIRONMENTAL PRODUCT DECLARATION



DIASEN

Environmental Product Declaration

In accordance with ISO 14025:2006 and
EN 15804:2012+A2:2019/AC:2021

EPD INFORMATION

Registration number of EPD(s):	EPD–IES–0030969:001
Product names:	*Primer and Coatings Line* Floorgum Paint, Color Primer, SBS–bond, D20, Grip Primer, Aquabond, Revela Clear
EPD owner:	*DIASEN S.r.l.*
Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products from a company, based on worst case results
EPD new version date:	*2026-10-02*
EPD valid until:	*2031–10-02*

GENERAL INFORMATION

The address of the programme operator:	EPD International AB, Box 210 60, SE–100 31 Stockholm, Sweden
E–mail:	support@environdec.com

Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product category rules (PCR):	PCR 2019:14 Construction products, Version 2.0.1
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

Third–party Verification

Independent third–party verification of the declaration and data, according to ISO 14025:2010

☐ EPD process certification ☒ EPD verification

Third party verifier:	***Certiquality S.r.l.*** Via Gaetano Giardino, 4, 20123 – Milan Tel. +39 02 806 9171 www.certiquality.it
Accredited by:	***Accredia*** Accreditation Number: n.0027VV

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

☐ Yes ☒ No

An EPD may be updated or depublished if conditions change. To find the last version of the EPD, and to confirm its validity, see www.environdec.com. The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but published in different EPD programmes may not be comparable. For two EPDs to be comparable:

- they shall be based on the same PCR (including the same first–digit version number) or be based on fully aligned PCRs or versions of PCRs;
- cover products with identical functions, technical performances and use (e.g. identical declared/functional units);
- have identical scope in terms of included life–cycle stages (unless the excluded life–cycle stage is demonstrated to be insignificant);
- apply identical impact assessment methods (including the same version of characterisation factors);
- and be valid at the time of comparison.

EPDs of construction products may not be comparable if they are not compliant with EN 15804. For further information on comparability, see EN 15804 and ISO 14025.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: DIASEN S.R.L.

Address: Zona Industriale Berbentina, 5 – 60041 – Sassoferrato (AN) – Italy

Contact: Giulia Mengotti

Address and contact information of the LCA practitioner commissioned by the EPD owner: Roberto Petrucci – University of Perugia – DICA – Strada di Pentima, 4 – 05100 – Terni (Italy)

DESCRIPTION OF THE ORGANIZATION

Diasen is an Italian company specialized in developing materials and innovative solutions for architecture and green building, focusing on energy efficiency and indoor comfort. The company operates in the construction materials sector, engineering thermal and acoustic insulation systems, waterproofing solutions, and coatings for public, residential, and sports buildings.

Corporate activities are driven by compliance with current environmental regulations and the mitigation of related environmental impacts.

Since 2007, Diasen has implemented an Environmental Management System certified to ISO 14001:2015, and operates in accordance with ISO 9001:2015 and ISO 45001:2018 standards. The company has achieved B Corp® certification, and completed LEED®, WELL®, and BREEAM® mapping for more than 40 products.

Manufacturing processes incorporate cork and other natural raw materials, utilizing low–environmental–impact technical solutions.

Research and Development activities focus on the utilization of production by–products or recoverable materials, as well as enhancing thermal insulation performance to lower building energy demand.

Management system–related certifications

ISO 9001:2015 – ISO 14001:2015 – ISO 45001:2018

PRODUCT INFORMATION

1

Product name	FLOORGUM PAINT
Product identification	see Errore. L'origine riferimento non è stata trovata.
Product description	Water–based, high–durability and single–component coating designed for pedestrian and sports surfaces. Its grain size 0.06–0.1 mm provides a seamless, anti–slip shield with superior resistance to UV rays and thermal shocks. It harmonizes urban functionality, from cycle lanes to multipurpose courts, with long–term wear resistance and compliance with environmental regulations.
UN CPC code	35111 - Paints and varnishes (including enamels and lacquers) based on polymers, dispersed or dissolved in an aqueous medium (Polymer-based coatings and adhesion-promoting primers in aqueous solution)
Diasen product code	013



2

Product name	REVELA CLEAR
Product identification	See ***Table 2***
Product description	Two–component, water–based transparent coating engineered to preserve and protect architectural textures. It creates an ultra–thin, high–resistance film against abrasion and chemical stress. Ideal for bathrooms, tiles, and resin systems, it forms a protective film that preserves surface aesthetics while ensuring durability and ease of cleaning.
UN CPC code	35111 - Paints and varnishes (including enamels and lacquers) based on polymers, dispersed or dissolved in an aqueous medium (Polymer-based coatings and adhesion-promoting primers in aqueous solution)
Diasen product code	181



3

Product name	AQUABOND
Product identification	See ***Table 3***
Product description	A ready–to–use adhesion promoter enriched with selected mineral aggregates. This "mechanical bridge" is engineered to transform smooth or low–absorption substrates into high–grip surfaces. It ensures the perfect integration of plasters and levelling compounds, fostering adhesion between the support and subsequent coating layers. VOC–free primer.
UN CPC code	35111 - Paints and varnishes (including enamels and lacquers) based on polymers, dispersed or dissolved in an aqueous medium (Polymer-based coatings and adhesion-promoting primers in aqueous solution)
Diasen product code	011



4

Product name	COLOR PRIMER
Product identification	See ***Table 4***
Product description	A white, opaque product formulated with elastomeric resins and fine quartz. Ideal for enhancing adhesion of water–based decorative coatings and cork–based finishes such as *Decork Mediterraneo Deep* and *Decork Façade Reflex*. Perfect for both indoor and outdoor continuity, it ensures aesthetic homogeneity and adhesion on diverse mineral supports.
UN CPC code	35111 - Paints and varnishes (including enamels and lacquers) based on polymers, dispersed or dissolved in an aqueous medium (Polymer-based coatings and adhesion-promoting primers in aqueous solution)
Diasen product code	135



5

Product name	GRIP PRIMER
Product identification	See ***Table 5***

Product description	Bonding agent engineered for difficult surfaces like metals, ceramics, and polyurethane boards. Formulated with specialized resins and mineral fillers, it acts as an adhesion interface for liquid–applied coating systems. It ensures a robust, long–lasting connection between modern industrial materials and advanced architectural coatings.	
UN CPC code	35111 - Paints and varnishes (including enamels and lacquers) based on polymers, dispersed or dissolved in an aqueous medium (Polymer-based coatings and adhesion-promoting primers in aqueous solution)	
Diasen product code	044	

6

Product name	D20	
Product identification	See ***Table 6***	
Product description	A deep–penetrating water–based primer designed to re–awaken and stabilize dusty or aged mineral supports. By encapsulating surface particles, it restores the structural integrity of skim coats and plasters. This transparent stabilizer ensures that decorative finishes bond to a solid, healthy foundation, enhancing the lifespan of the entire wall system. VOC–free primer.	
UN CPC code	35111 - Paints and varnishes (including enamels and lacquers) based on polymers, dispersed or dissolved in an aqueous medium (Polymer-based coatings and adhesion-promoting primers in aqueous solution)	
Diasen product code	045	

7

Product name	SBS–BOND	
Product identification	See ***Table 7***	
Product description	A ready–to–use, water–based primer specifically engineered for the preparation of bituminous membranes. It creates an adhesion interface on weathered or slate–finished surfaces, facilitating the application of new liquid waterproofing without requiring membrane removal.	
UN CPC code	35111 - Paints and varnishes (including enamels and lacquers) based on polymers, dispersed or dissolved in an aqueous medium (Polymer-based coatings and adhesion-promoting primers in aqueous solution)	
Diasen product code	020	

Table Section

***Table 1**: Floorgum Paint*

Technical Feature	Value		Test method
Slip Resistance	1,127 (level 3)		UNI 8272 – Part 11
Resistance to chemicals	Alkali *(diluted ammonia)*	Good *(24 hours)*	ANAS
	Detergents *(neutral undiluted)*	Excellent *(24 hours)*	
Resistance to sliding friction *(Pendulum methodology)*	PTV = 66		ANAS

Accelerated weathering test	1680 hr (> 10 yr)	UNI EN ISO 11507
Permeability to water vapour	689	UNI EN ISO 7783
Hazardous substances	Quartz (RCS < 1 %); 1,2–benzisothiazol–3(2H)–one; Reaction mass of 5–chloro–2–methyl–2H–isothiazol–3–one and 2–methyl–2H–isothiazol–3–one. *(all < 1%)*	CE Regulation 878/2020

***Table 2**: Revela Clear*

Technical Feature	Value		Test method
Slip Resistance	195		UNI 8272 – Part 11
Resistance to chemicals	Excellent on	Hydrocarbons	ANAS
		Lubricating oils	
		Salt	
		Diesel fuel	
	Result	No Defects	
Accelerated weathering test	1680 hr (10 yr)		UNI EN ISO 11507
Permeability to water vapour	1932		UNI EN ISO 7783
Hazardous substances	*A*	*B*	CE Regulation 878/2020
	1,2–benzisothiazol–3(2H)–one; Reaction mass of 5–chloro–2–methyl–2H–isothiazol–3–one and 2–methyl–2H–isothiazol–3–one.	Hexamethylene diisocyanate, oligomers	

***Table 3**: Aquabond*

Technical Feature	Value		Test method
Slip Resistance	ND		UNI 8272 – Part 11
Adhesion to several supports Pull–off test	Cementitious substrates	> 4.0 *Mpa* (excellent)	UNI EN ISO 4624
	Metal		
	Wood		
	Glass		
	Drywall	1.0 *MPa* (sufficient)	
Permeability to water vapour	788		UNI EN ISO 7783
Test VOC *(see **Table 8**)*	VOC–*free*		EU Directive compliant 2004/42/CE *(EU Decopaint Directive)*
Hazardous substances	1,2–benzisothiazol–3(2H)–one; Reaction mass of 5–chloro–2–methyl–2H–isothiazol–3–one and 2–methyl–2H–isothiazol–3–one. *(all < 1%)*		CE Regulation 878/2020

***Table 4**: Color Primer*

Technical Feature	Value		Test method
Adhesion to several supports *Pull–off test*	Concrete	1,66 *MPa*	UNI EN ISO 4624 ASTM D 4541
	Metal	1,50 *MPa*	
	Galvanized sheet	1,75 *MPa*	
	Galvanized and painted sheet	0,50 *MPa*	
Hazardous substances	Quartz (RCS < 1 %); 1,2–benzisothiazol–3(2H)–one; Reaction mass of 5–chloro–2–methyl–2H–isothiazol–3–one and 2–methyl–2H–isothiazol–3–one (3:1). *(all < 1%)*		CE Regulation 878/2020

Table 5: *Grip Primer*

Technical Feature	Value		Test method
Adhesion to several supports *Pull–off test*	Concrete	1,66 *MPa*	UNI EN ISO 4624 ASTM D 4541
	Metal	1,50 *MPa*	
	Tiles	4,17 *MPa*	
	PUR Panels	1,33 *MPa*	
Water Permeability	S_d = 0,49 m		UNI EN ISO 7783
Hazardous substances	Quartz (RCS < 1 %); 1,2–benzisothiazol–3(2H)–one; 5–chloro–2–methyl–2H–isothiazol–3–one; 2–methyl–2H–isothiazol –3–one (3:1). *(all < 1%)*		CE Regulation 878/2020

Table 6: *D20*

Technical Feature	Value	Test method
Vapour Permeability (m)	*S_d = 0,43 m*	UNI EN ISO 7783
Test VOC	Pass	EU Directive compliant 2004/42/CE *(EU Decopaint Directive)*
	VOC–*free*	EU Ecolabel
Hazardous substances	1,2–benzisothiazol–3(2H)–one; Reaction mass of 5–chloro–2–methyl–2H–isothiazol–3–one and 2–methyl–2H–isothiazol–3–one (3:1). *(all < 1%)*	CE Regulation 878/2020

Table 7: *SBS–Bond*

Technical Feature	Value	Test method
Adhesion for Direct Tensile mode	0,53 Mpa *(Failure Type A/B)*	UNI EN 1542
Flammability	Class B	UNI EN 13501–1
Hazardous substances	1–Propanaminium, 3–amino–N–(carboxymethyl)–N,N–dimethyl–, N–C8–18 acyl derivs., hydroxides, inner salts; 1,2–benzisothiazol–3(2H)–one; reaction mass of 5–chloro–2–methyl–2H–isothiazol–3–one and 2–methyl–2H–isothiazol–3–one (3:1) *(all < 1%)*	CE Regulation 878/2020

Table 8: *VOC test results for Aquabond*

Technical Feature	Value			Test method
Organic Volatile Compounds (VOC) Test	**SCAQMD Rule 1113**		Pass	SCAQMD
	Indoor Air Comfort GOLD®		Pass	Indoor Air Comfort GOLD® *(v7.0, 2020)*
	LEED 4.1		Compliant	LEED v4 and v4.1 BETA (2021)
	BREEAM	*International*	Compliant	BREEAM International *(New Construction 2016)*
		NOR	Compliant	BREEAM–NOR (2016)
	French Regulation		A+	DEVL1101903D and DEVL1104875A
	CAM Edilizia (Italy)		Pass	CAM Edilizia 11/10/2017
	AgBB / **ABG** (Germany)		Pass	AgBB 2011 and ABG norm
	Blue Angel		Pass	D×10–UZ 12a
	EU Taxonomy		Pass	EU Taxonomy
	Belgian Regulation		Pass	C–2014/24239

Additional Relevant Information

The products *Floorgum paint, Grip Primer, SBS Bond, Aquabond* and *D20* are supplied in plastic buckets containing an amount of product of 20 kg. The product *Vapostop* is supplied in plastic buckets containing an amount of product of about 5 kg.

The product *Revela Clear* is supplied in plastic buckets by 6,50 kg. Finally, the products *Color Primer* is supplied in plastic buckets containing an amount of product of 15 kg.

References to any relevant websites for more information or explanatory materials

For more information, please refer to www.diasen.com

MANUFACTURING

The manufacturing process begins with the receipt and storage of raw materials from suppliers. Depending on their characteristics, materials arrive in plastic or metal buckets, kraft paper and plastic bags, or unpackaged in bulk; the latter are stored directly in dedicated silos. These materials are fed into the liquid production mixer either automatically or manually. Packaged ingredients stored in the warehouse are subsequently transported to the mixing station via electric forklifts.

Production is a batch (discontinuous) process where all components are mechanically blended. The finished product is then packaged in buckets, palletized on wooden pallets, secured with a protective polymer hooding film, and stored in the finished goods warehouse. Quality control is strictly performed both during production and prior to shipment.

This manufacturing process requires water and operates virtually as a closed–loop system, generating no material scraps. Water from the municipal aqueduct is used exclusively to clean the mixer between different production cycles and is subsequently discharged as industrial wastewater. For further details, please refer to the *Preliminary Production Phase Outline for the 'Primers and Coatings' line* (**Errore. L'origine riferimento non è stata trovata.**) for further details.

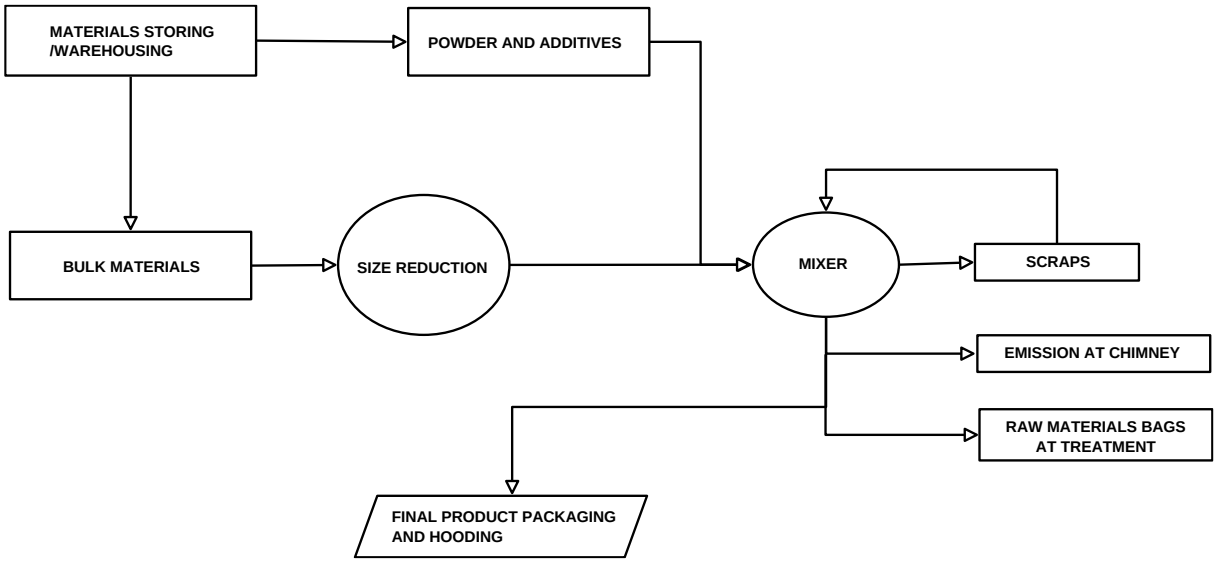


Figure 1: *Preliminary scheme of the Primers and Coatings Line production's phase.*

CONTENT DECLARATION

Table 9: *Content declaration and substances list for the Primers and Coatings Line (the indicated mass values refer to the minimum and maximum found among all products included in the EPD).*

Product content	**Mass, kg**	**Post–consumer recycled material,** *mass–% of product*	**Biogenic material,** *mass–% of product*	**Biogenic material,** *kg C/product or declared unit*
Water	0,00 – 0.79	0	0	0
Quartz	0,00 – 0.512	0	0	0
Talcum powder	0,00 – 9.62×10^{-2}	0	0	0
Di–isocyanate	0,00 – 0.167	0	0	0
Polyurethane resin	0.00 – 0.55	0	0	0
Acrylic resins	0.00 – 0.433	0	0	0
Organic Additives	0.00 – 2.43×10^{-2}	0	0	0
Inorganic Additives	0.00 – 4.21×10^{-2}	0	0	0
White spirit	0.00 – 8.00×10^{-2}	0	0	0
Siloxane Emulsion	0.00 – 0.11	0	0	0

Table 10: *Content declaration and substances list for the used packaging on the Primers and Coatings Line.*

Packaging materials	**Mass, kg**	**Mass %** *(versus the product)*	**Biogenic material,** *kg C/product or declared unit*
Wood	2.08×10^{-2} – 6.25×10^{-2}	2.08 – 6.25	8.16×10^{-3} – 2.45×10^{-2}
PP bucket	1.24×10^{-2} – 0.28	1.24 – 28.00	0
LDPE Film	3.36×10^{-4} – 1.01×10^{-3}	0.04– 0.10	0
Paper	0.00 – 4.50×10^{-2}	0.00 – 4.50	0.00 – 2.03×10^{-2}

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO_2.

Table 11: *Content of hazardous substances used in the Primers and Coatings Line.*

Declaration of Hazardous substances	**EC No.**	**CAS No.**	**Mass–%** *per product or declared unit*
Quartz	238-878-4	14808-60-7	0.00 – 40.00
Di–socianate	931-274-8	28182-81-2	0.00 – 17.00
Polyurethane resin	Not relevant	9063–87–0	0.00 – 55.00
Acrylic resins	Not relevant	9063–87–0	0.00 – 44.00
Organic Additives	220-120-9	2634-33-5	0.00 – 1.00
	Not relevant	55965-84-9	0.00 – 1.00
	308-107-7	97862-59-4	0.00 – 2.50
	220-239-6	2682-20-4	0.00 – 1.00

The products are not classified as hazardous to human health or the environment in accordance with Regulation (EC) No **878/2020** (CLP). They do not contain any substances included in the Candidate List of Substances of Very High Concern (SVHC) for Authorization, nor any substances listed in Annex XIV (Authorization List) issued by the European Chemicals Agency (ECHA). Under normal storage and use conditions, these products can be handled without any specific precautions or personal protective equipment (PPE). The detailed composition of the products constitutes DIASEN S.r.l. proprietary know–how and remains strictly confidential.

LCA INFORMATION

The environmental performance of the products was assessed using the Life Cycle Assessment (LCA) method in accordance with the **EN ISO 14044:2021** standard. The Life Cycle Impact Assessment (LCIA) was performed according to the **EN 15804:2012+A2:2019** standard, which served as the core PCR. In this regard, the Product Category Rules (PCR) **2019:14** "Construction products" (**Version 2.0.1**) was used as the primary reference document

Among the other reference standards, the following ones have been taken into account for the development of the LCA and the LCIA other than to carry out this EPD:

- ISO 14025:2010 – Environmental labels and declarations – Type III environmental declarations – Principles and procedures;
- ISO 15942:2021 – Sustainability of construction works — Environmental product declarations — Communication format business–to–business;
- ISO 14020:2023 – Environmental labels and declarations — General principles;
- General Programme Instructions For The International EPD System – Version 5.0 2024–06–19;

The results of the estimated environmental impacts are relative statements and do not indicate the endpoints of impact categories, the exceeding of threshold values, safety margins, or risks. Although the specific properties of the various products may differ slightly, their fields of application are substantially equivalent. Furthermore, each product can perform multiple functions or deliver varying levels of performance within a building component, making the definition of a single, specific functionality for each item highly complex.

For this reason, and in accordance with the reference standards, a declared unit has been adopted instead of a functional unit. For all products covered by this EPD, the declared unit is defined as **1.00 kg of product**, ready for sale and transport to the end–user (builder).

This includes its packaging (bucket), along with its proportional share of plastic protective film, palletized on the Euro–pallet used for transport.

Finally, it should be noted that the manufacturing of all investigated systems takes place exclusively at the Diasen production plant in Sassoferrato (AN), Italy.

Multiple products are included in the same EPD as they share the same core PCR, are manufactured by the same company, and undergo the same production process.

Declared unit

1 kg of product as liquid product mix is defined as Declared Unit (DU).

Reference service life

The environmental impact of 1 kg of liquid product (packaging included) for each products involved is described. According to the system boundary of this EPD, a Reference Service Life has not been provided.

Time representativeness

Data are referred to the production carried out in 2025 and have been provided by DIASEN S.R.L. Also, data regarding the geographic origin of any raw materials, packaging materials etc. have been provided, as well as the transportation media.

Database and LCA software used

Ecoinvent 3.11 used as a database and **SimaPro Version 10.3.0** as a software.

Geographical scope

Global.

Description of system boundaries

Cradle to gate (A1–A3).

Within each of the assessed life cycle stages, all material and energy input and output flows have been included. No raw materials or components have been omitted, regardless of their individual contribution to the overall environmental impact or to any specific impact indicators. Lifecycle modules that were not evaluated in this LCA are explicitly marked as **"ND" (Not Declared)**, as shown in **Errore. L'origine riferimento non è stata trovata.**.

Table 12: *Reporting table for the Primers and Coatings Line.*

	Product stage				Distribution / installation stage				Use stage				End of life stage				Beyond product life cycle
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De–construction demolition	Transport	Waste processing	Disposal	Reuse–Recovery–Recycling–potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Geography	GLO	GLO	IT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Share of primary data	2.04 – 10.03%			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Variation products	87.67%			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Variation sites	0 %			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Cut–off criteria

The consumption of raw materials and energy related to ordinary and extraordinary maintenance operations was included, as well as energy consumption associated to illumination and heating of personnel, despite they were not relevant to environmental impact calculations. No consumption of auxiliary materials and waste related to extraordinary activities (A3), having a periodicity exceeding 3 years, take place.

Allocation criteria

Each manufacturing cycle yields a single product output, with no co–products or by–products generated. Furthermore, since the manufacturer provided primary data regarding material and energy consumption, as well as scraps and waste, no allocation procedures were required.

Production is carried out strictly on a batch–by–batch basis (discontinuous process), even under steady–state operating conditions; therefore, only one specific product is manufactured inside the facility at any given time. After a straightforward cleaning procedure, the same equipment can be seamlessly used to process a completely different material.

Data quality

As previously stated, the background data used in this EPD were retrieved from the **Ecoinvent 3.11 database**, and **SimaPro 10.3.0** software was utilized for inventory modelling. The geographical reference is Italy or, where necessary, Central Europe, while the datasets used span the last 5 years.

Data collection involved analyzing internal production and environmental data from the Diasen S.r.l. manufacturing site, acquiring site–specific data for all production processes included in the LCA, and mapping the energy sources utilized (modeled via the Italian Residual Mix).[10] Regarding raw materials, the most relevant datasets are either European averages or specific to the suppliers. The reference time period for all inventory data (product composition, transport, production rates, etc.) is 2025. Background data are based on EPDs compliant with EN 15804 and recognized LCA databases. The data quality of the raw materials in A1 is presented in the table **Errore. L'origine riferimento non è stata trovata.**.

Table 13: *Data quality of the raw materials in A1*

Material	Source	Quality	Reference year
Quartz	Diasen	Ecoinvent 3.11	2025
Talcum Powder	Diasen	Ecoinvent 3.11	2025
Expanded materials (Perlite, etc.)	Diasen	Ecoinvent 3.11	2025
Acrylic and Polyacrylic resins	Diasen	Ecoinvent 3.11	2025
Additives (Organic and Inorganic)	Diasen	Ecoinvent 3.11	2025
Bituminous and Siloxane Emulsions	Diasen	Ecoinvent 3.11	2025
Diisocianate	Diasen	Ecoinvent 3.11	2025
Packaging (Pallet, Bags, Film)	Diasen	Ecoinvent 3.11	2025

Data Quality Indicators (DQIs) are assessed based on five categories on a scale from 1 (excellent) to 5 (poor) (*Errore. L'origine riferimento non è stata trovata.*).

Table 14: *Data Quality Indicators (DQIs) for the* ***Primer and Coatings Line***

Flow Category	***Approach / Data Source***	***DQIs*** *(Min – Max Range)*					***Qualitative Assessment***
		Reliability	Completeness	Temporal correlation	Geographical correlation	Further technological correlation	
Materials, Energy and Process (A1-A3)	Primary factory data and specific datasets	1.4	1.0	1.2	1.0	1.8	Excellent / Good

In compliance with the system boundaries defined for this product (*Cradle-to-Gate*), the index reflects the extremely high level of accuracy of the primary data collected directly at the manufacturing facility. The overall average score for the entire product line is **(1.4, 1.0, 1.2, 1.0, 1.8)**. The excellent quality of the baseline data is reflected in the ideal scores for completeness and geographical correlation (both equal to 1.0) and in the outstanding freshness of the temporal data (equal to 1.2). The only slight and expected drop is observed in the further technological correlation indicator (1.8); this is due to the formulation complexity of the product, which requires the use of acrylic resins, epoxy resins, and polymer fibers, whose background modeling must necessarily rely on standard industrial literature datasets. The production is carried out using an energy mix, whose **19,10%** is self–produced by mean of a proprietary photovoltaic plant. The remaining widest part of the **80,90%** is purchased (National Grid). The latter share has been modelled from Italian Residual Mix.

The related details have been summarized in **Errore. L'origine riferimento non è stata trovata.**.

Table 15: *Details on the used Electricity mix*

	Data Source			GWP–GHG	Unit
Mix Elettrico Diasen	Diasen Photovoltaic	Residual Mix (AIB)	Ecoinvent 3.11	0.486	Kg CO_2 eq./kWh

Table 16: *Share of primary data of the GWP–GHG*

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP–GHG results for A1–A3
Manufacturing of product	Collected data	EPD owner	2025	Primary data	0%
Generation of electricity used in manufacturing of product	Collected data and Database	EPD Owner and AIB Residual Mix	2025	Primary data	2.04 – 10.03%
Input Raw materials	Collected data	EPD Owner Ecoinvent 3.11	2025	Primary data, Secondary data	0%
Other processes	Databases	Ecoinvent 3.11	2025	Secondary data	0%
Total share of primary data, of GWP–GHG results for A1–A3					2.04 – 10.03%

The share of primary data is calculated based on the GWP–GHG results. This simplified data quality indicator is intended to encourage the use of primary data, thereby enhancing both the representativeness and the comparability of EPDs. Please note that this indicator does not capture all aspects of data quality and is not comparable across different product categories.

ENVIRONMENTAL PERFORMANCE

This section presents the environmental profiles of the products covered by this EPD, calculated using the LCA methodology. In accordance with the system boundaries defined for this study, a "Cradle–to–gate" approach has been adopted, including stages A1–A3. All calculations were performed using compliant software tools, as required by the EPD Programme General Instructions.

LCA RESULTS OF THE PRODUCT – WORST CASE

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks." The characterisation factors considered are based on the assessment tool **methodology (EF) 3.1.** About the mandatory impact category indicators and, in particular, the Biogenic Carbon dioxide, the biogenic carbon leaving the product system in subsequent modules, not included into the life cycle, as A5 and C (according to the PCR guidelines), have been balanced out already in modules A1–A3.

Disclaimer 1: This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal inunderground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator;

Disclaimer 2: The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Table 17: *Mandatory impact category indicators according to EN 15804+A2:2019*

Results per functional or declared unit

Indicator	Unit	A1–A3
GWP–total	kg CO_2 eq.	4.91

GWP–fossil	kg CO_2 eq.	4.89
GWP–biogenic	kg CO_2 eq.	3.97×10^{-2}
GWP–luluc	kg CO_2 eq.	1.81×10^{-2}
ODP	kg CFC 11 eq.	1.53×10^{-6}
AP	mol H^+eq.	2.33×10^{-2}
EP–freshwater	kg P eq.	1.48×10^{-3}
EP–marine	kg N eq.	5.34×10^{-3}
EP–terrestrial	mol N eq.	4.74×10^{-2}
POCP	kg NMVOC eq.	1.83×10^{-2}
ADP–minerals &metals*	kg Sb eq.	2.42×10^{-5}
ADP–fossil*	MJ	95.03
WDP*	m^3	1.15
Acronyms	GWP–fossil = Global Warming Potential fossil fuels; GWP–biogenic = Global Warming Potential biogenic; GWP–luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP–freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP–marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP–terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP–minerals&metals = Abiotic depletion potential for non–fossil resources; ADP–fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation–weighted water consumption	

Table 18: *Additional mandatory and voluntary impact category indicators*

Results per functional or declared unit

Indicator	Unit	A1–A3
GWP–GHG	kg CO_2 eq.	4.71
Note	This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH4 fossil, CH4 biogenic and Dinitrogen monoxide were updated in line with the guidance of PCR 2019:14 Construction products, version 2.0.1 Annex 1. This indicator is identical to the GWP–total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO2 is set to zero.	

Table 19*: Resource use indicators*

Results per functional or declared unit

Indicator	Unit	A1–A3
PERE	MJ	6.74
PERM	MJ	0.00
PERT	MJ	6.74
PENRE	MJ	83.60
PENRM	MJ	7.93
PENRT	MJ	91.56
SM	kg	0.00
RSF	MJ	0.00
NRSF	MJ	2.49×10^{-2}
FW	m^3	1.14
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non–renewable primary energy excluding non–renewable primary energy resources used as raw materials; PENRM = Use of non–renewable primary energy resources used as raw materials; PENRT = Total use of non–renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non–renewable secondary fuels; FW = Use of net fresh water	

Table 20 *: Waste indicators*

Results per functional or declared unit

Indicator	Unit	A1–A3
HWD	kg	4.32×10^{-5}
NHWD	kg	0.85
RWD	kg	9.27×10^{-5}

Acronyms	HWD = Hazardous waste disposed; NHWD =Non azardous waste disposed; RWD = Radiactive waste disposed;

***Table 21** : Output flow indicators*

Results per functional or declared unit

Indicator	Unit	A1–A3
CRU	kg	0
MFR	kg	0
MER	kg	0
EEE	MJ	0
EET	MJ	0

Acronyms	CRU = Componentsfor re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy;

***Table 22:** Additional environmental performance indicators according to EN 15804+A2:2019*

Results per functional or declared unit

Indicator	Unit	A1–A3
PM	Disease incid.	2.58×10^{-7}
IRP[1]	kBq U235 eq.	0.36
ETP–fw[2]	CTUe	90.68
HTP–c[2]	CTUh	4.78×10^{-9}
HTP–nc[2]	CTUh	1.06×10^{-7}
SQP	–	21.62

Acronyms	PM = Particulate matter Emission; IRP = Ionizing radiation, human health; ETP–fw = Ecotoxicity (Freshwater); HTP–c = Human toxicity, cancer effects; HTP–nc = Human toxicity, non-cancer effects; SQP = Soil quality potential/Land use related impacts;

DECLARATION OF THE VARIATION IN RESULTS

This EPD is characterised by a high variability on the value of the widest part of the calculated indicators (variations above 10%). As specified in the **PCR 2019:14** Construction products, **Version 2.0.1**, this variation has been declared in the EPD. The variation between the highest and lowest impact across the included products is detailed in the tables below for environmental indicators and GWP–GHG.

***Table 23:** Environmental Impacts Results Variation*

Indicator	A1–A3 Results variation (%)
GWP–total	85.97
GWP–fossil	99.40
GWP–biogenic	85.95
GWP–luluc	97.23
ODP	98.38
AP	87.31
EP–freshwater	89.26
EP– marine	90.28
EP–terrestrial	88.85
POCP	82.06
ADP–minerals & metals	86.78

ADP–fossil	82.20
WDP	82.87
PERE	79.89
PERT	79.89
PENRE	81.33
PENRM	96.37
PENRT	81.03
NRSF	98.44
FW	83.04
PM	89.78
IRP	87.48
ETP–fw	92.48
HTP–c	92.17
HTP–nc	53.41
SQP	62.16
HWD	100.00
NHWD	92.65
RWD	87.75

Table 24: *GWP–GHG Impacts Results Variation*

Indicator	Unit	A1–A3 Results variation (%)
GWP–GHG	Kg CO_2eq.	87.67

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VERSION HISTORY

Original Version of the EPD, 2026-10-02