

Environmental Product Declaration

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

One-component Polyurethane Liquid Waterproofing membranes from **ALCHIMICA S.A.**

Products included in the EPD:

HYPERDESMO®

HYPERDESMO® 815

HYPERDESMO® CLASSIC

HYPERDESMO® LV

HYPERDESMO® C-LV

HYPERDESMO® HAA

HYPERDESMO® S-WR

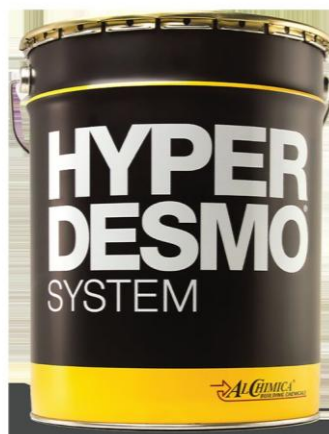
HYPERDESMO® S-WR BITUMEN

EPD of multiple products, based on the average results of the product group



Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0027451:001
Version date:	2025-12-18
Validity date:	2030-12-18

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com



GENERAL INFORMATION

Programme Information	
Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
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, CPC code: 351 Paints, varnishes and other related products.
PCR review was conducted by: The technical Committee of the International EPD System. A full list of members is available on www.environdec.com . The review panel may be contacted via support@environdec.com

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
☒ Individual EPD verification without a pre-verified LCA/EPD tool Third-party verifier: Business Quality Verification P.C.
 Address: 5, Konitsis Street, GR 15125, Marousi, Attica / Greece www.bqv.gr – info@bqv.gr Accredited by: Hellenic Accreditation System (ESYD) with accreditation number 1218
Procedure for follow-up of data during EPD validity involves third party verifier:
☒ Yes ☐ No

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. For further information about comparability, see EN 15804 and ISO 14025

Information about EPD owner

Owner of the EPD: ALCHIMICA S.A.

Production site: 69th km Athens-Lamia National Road, 341 00

Contact: alchimica@alchimica.com

Description of the organisation:

ALCHIMICA S.A. is a manufacturer of advanced construction chemicals, with over 40 years of expertise in the design, formulation, and production of high-performance systems for waterproofing, concrete repair, structural protection, ETICS and industrial flooring. Serving both new construction and renovation markets, our solutions are specified in projects ranging from residential developments to complex infrastructure works across more than 100 countries.

With a production capacity exceeding 40,000 tons annually, ALCHIMICA operates three fully owned manufacturing facilities with a total footprint of 55,000 m². These include state-of-the-art dedicated units for resin-based and liquid-applied systems, alongside automated lines for polyurethane sealants and cement-based mortars. Every batch is monitored through integrated quality control protocols, ensuring consistency, traceability, and full compliance with applicable technical standards.

Our in-house R&D center plays a central role in product innovation, staffed by a multidisciplinary team of chemists and engineers. Close collaboration between R&D, production, and technical support ensures rapid development cycles and the ability to tailor solutions to market-specific demands. The result is a large portfolio of CE-marked products and systems that meet the latest regulatory and performance requirements in diverse climates and applications.

ALCHIMICA's range includes:

- Liquid-Applied Polyurethane Waterproofing Membranes
- Polyurethane Sealing Technologies
- Cementitious Mortars for Concrete Repairs
- High-Performance Cementitious Waterproofing Mortars
- ETICS Systems
- Tile Adhesives
- Industrial Flooring Systems

Certified under ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018, our operations reflect a structured commitment to quality, environmental stewardship, and occupational safety. Sustainability is embedded in our manufacturing and R&D processes, with a focus on long-lasting systems that reduce resource use and lifecycle impacts. We actively pursue the development of low-emission, user-safe formulations that support healthier environments and align with modern green building standards.

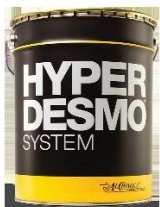
Through energy-efficient production, waste minimization, and responsible sourcing, ALCHIMICA aims to reduce its environmental footprint while delivering reliable, high-performance solutions that contribute to the long-term resilience of the built environment.

A defining element of ALCHIMICA's approach is the technical support provided alongside its products. From initial specification to on-site application, our teams assist professionals with product selection, detailing, and installation training—ensuring both correct use and long-term performance. We are not simply suppliers, but long-term partners to the construction industry—offering proven solutions, industrial capability, and a legacy of performance.

Product information

Product name: **HYPERDESMO®**

Product identification: **HYPERDESMO®** is a one-component polyurethane waterproofing membrane designed for long-term protection of roofs, external surfaces, and structural elements.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO® is a one-component, polyurethane liquid-applied waterproofing membrane that cures by reaction with ambient humidity to form a highly elastic, durable, and chemically resistant coating. Manufactured by ALCHIMICA S.A., it is based on pure elastomeric hydrophobic polyurethane resins with inorganic fillers, providing excellent mechanical strength, UV stability, and long-term weathering resistance. The membrane achieves strong adhesion to a wide range of substrates—including concrete, cement boards, metal surfaces, asphalt membranes, EPDM, and polyurethane foams—making it suitable for roofs, balconies, wet areas, car parks, infrastructure works, and protective coatings.

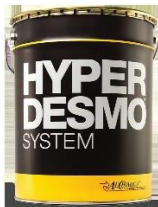
HYPERDESMO® is CE-certified under ETA-04/0082 and is also BBA-certified (Agrément Certificate 18/5567), demonstrating compliance with European and UK requirements for liquid-applied roofing systems. It offers high elongation, resistance to extreme temperatures (–40°C to +90°C), water vapor permeability, and proven long-term performance under accelerated weathering. Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, it ensures consistent quality and reliability for demanding waterproofing applications.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69th km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® 815**

Product identification: **HYPERDESMO® 815** is a one-component, low-viscosity polyurethane waterproofing membrane for long-term protection of roofs, balconies, and building elements.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO® 815 is a one-component, low-viscosity polyurethane liquid-applied waterproofing membrane designed for durable protection of roofs, external surfaces, and structural elements. It cures with atmospheric humidity to form an elastic, seamless membrane with strong adhesion to concrete, cement boards, metal substrates, asphalt membranes, and other common building materials. Based on pure elastomeric hydrophobic polyurethane resin with inorganic fillers, it provides excellent mechanical performance, UV and weathering resistance, thermal stability, and long-term elasticity down to -40°C.

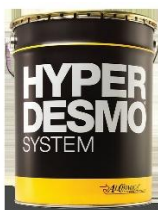
The product is CE-certified under ETA-04/0082 and BBA-approved (Agrément Certificate 18/5567), demonstrating compliance with European and UK requirements for liquid-applied roofing systems. With high elongation, good chemical resistance, and water vapor permeability, HYPERDESMO® 815 is suitable for roofs, balconies, wet areas, metal surfaces, and car park waterproofing systems. Manufactured under ISO 9001, ISO 14001, and ISO 45001 management systems, it ensures consistent quality and long-term performance in demanding waterproofing applications.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69th km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® CLASSIC**

Product identification: **HYPERDESMO® CLASSIC** is a one-component, low-viscosity polyurethane waterproofing membrane for long-term protection of roofs, balconies, and building elements.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO® CLASSIC is a one-component, low-viscosity polyurethane liquid-applied waterproofing membrane designed for durable protection of roofs, external surfaces, and structural elements. It cures with atmospheric humidity to form an elastic, seamless membrane with strong adhesion to concrete, cement boards, metal substrates, asphalt membranes, and other common building materials. Based on pure elastomeric hydrophobic polyurethane resin with inorganic fillers, it provides excellent mechanical performance, UV and weathering resistance, thermal stability, and long-term elasticity down to -40°C.

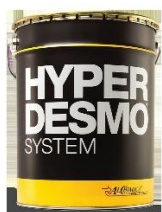
The product is CE-certified under ETA-04/0082 and BBA-approved (Agrément Certificate 18/5567), demonstrating compliance with European and UK requirements for liquid-applied roofing systems. With high elongation, good chemical resistance, and water vapor permeability, HYPERDESMO® CLASSIC is suitable for roofs, balconies, wet areas, metal surfaces, and car park waterproofing systems. Manufactured under ISO 9001, ISO 14001, and ISO 45001 management systems, it ensures consistent quality and long-term performance in demanding waterproofing applications.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69th km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® LV**

Product identification: **HYPERDESMO® LV** is a low-viscosity one-component polyurethane membrane designed for sprayable and brush-applied waterproofing of roofs, balconies, and exposed surfaces.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO® LV is a low-viscosity, one-component polyurethane liquid-applied waterproofing membrane formulated for applications requiring improved fluidity and sprayability. It cures with ambient humidity to form a seamless, highly elastic membrane with strong adhesion to concrete, cement boards, metal substrates, asphalt membranes, EPDM, and polyurethane foams. Developed by ALCHIMICA S.A., it is based on pure elastomeric hydrophobic polyurethane resin with controlled polymerization to achieve reduced viscosity and minimal solvent demand, enabling efficient application by roller, brush, or airless spray.

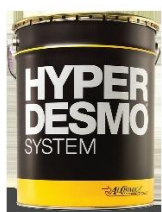
The product is CE-certified under ETA-18/0947, demonstrating compliance with European requirements for liquid-applied roofing systems. HYPERDESMO®-LV provides excellent mechanical properties, UV and weathering resistance, thermal stability, water vapor permeability, and elasticity down to -40°C. With tensile strength above 8 MPa, elongation exceeding 450%, and proven long-term durability in accelerated weathering and hydrolysis testing, it is suitable for roofs, balconies, car parks, stadiums, bridge platforms, and protective coatings. Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, it offers consistent quality and reliable long-term waterproofing performance.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69th km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® C-LV**

Product identification: **HYPERDESMO® C-LV** is a one-component, low-viscosity polyurethane waterproofing membrane for long-term protection of roofs, balconies, and building elements.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO® C-LV is a one-component, low-viscosity polyurethane liquid-applied waterproofing membrane designed for durable protection of roofs, external surfaces, and structural elements. It cures with atmospheric humidity to form an elastic, seamless membrane with strong adhesion to concrete, cement boards, metal substrates, asphalt membranes, and other common building materials. Based on pure elastomeric hydrophobic polyurethane resin with inorganic fillers, it provides excellent mechanical performance, UV and weathering resistance, thermal stability, and long-term elasticity down to -40°C.

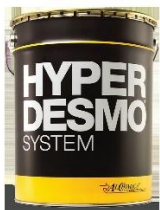
The product is CE-certified under ETA-18/0947 demonstrating compliance with European requirements for liquid-applied roofing systems. With high elongation, good chemical resistance, and water vapor permeability, **HYPERDESMO® CL-V** is suitable for roofs, balconies, wet areas, metal surfaces, and car park waterproofing systems. Manufactured under ISO 9001, ISO 14001, and ISO 45001 management systems, it ensures consistent quality and long-term performance in demanding waterproofing applications.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69th km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® HAA**

Product identification: **HYPERDESMO® HAA** is a rapid-curing polyurethane membrane for exposed and protected waterproofing of roofs, balconies, and external surfaces.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO® HAA is an all-weather, rapid-curing, one-component polyurethane waterproofing membrane developed with Humidity-Activated-Accelerator (HAA) technology. This advanced formulation integrates the accelerator in a blocked form, releasing it upon contact with humidity to deliver fast, uniform curing without bubbles or defects, even under cold or low-humidity conditions. The membrane forms a seamless, highly elastic, and durable coating with excellent adhesion to concrete, gypsum and cement boards, polyurethane foams, asphalt membranes, fibrous cement, and other common substrates.

Engineered for exposed and protected waterproofing, HYPERDESMO®-HAA provides strong UV and weather resistance, high mechanical strength, and outstanding thermal stability — with service performance up to +90°C and shock resistance up to +200°C. The coating remains flexible down to -40°C and offers high elongation, chemical resistance, and water vapor permeability to prevent moisture entrapment.

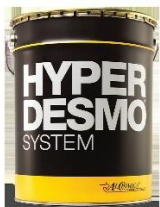
The product is CE-certified under ETA-18/1020 (ETAG 005) for liquid-applied roof waterproofing systems, covering external fire performance, working life (W3), climatic categories, load classes, and temperature resistance. Manufactured under ISO 9001, ISO 14001, and ISO 45001, HYPERDESMO®-HAA ensures long-term performance for roofs, balconies, verandas, metal decks, insulation foams, and various exposed architectural or industrial surfaces.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69th km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® S-WR**

Product identification: **HYPERDESMO® S-WR** is a one-component polyurethane membrane for waterproofing wet rooms and non-exposed building elements.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO® S-WR is a one-component, low-solvent polyurethane waterproofing membrane designed for wet rooms, foundations, and protected areas not exposed to UV. Produced with advanced polymerization technology, it forms a highly elastic, hydrophobic, and seamless coating that cures with

ambient humidity. Its optimized rheology allows effortless application on vertical and horizontal substrates, delivering long-term waterproofing performance in bathrooms, basements, balconies (under protection), and substructures.

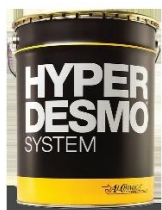
The product is CE-certified under EN 1504-2 (2928-CPR-111), root-resistant (CEN/TS 14416), and compliant with ASTM C 836/C 836M-18, SCAQMD Rule 1113, and LEED v4.1 VOC limits. With elongation above 1000%, excellent adhesion, and service performance down to -40°C, it provides durable moisture protection while allowing vapor diffusion to prevent trapped humidity. Manufactured under ISO 9001, ISO 14001, and ISO 45001, HYPERDESMO® S-WR ensures consistent reliability for non-exposed waterproofing applications.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69th km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® S-WR BITUMEN**

Product identification: **HYPERDESMO® S- WR BITUMEN** is a bitumen-modified polyurethane membrane for waterproofing wet rooms, foundations, and protected building elements.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO® S-WR BITUMEN is a one-component, bitumen-extended polyurethane waterproofing membrane formulated for wet rooms, foundations, and other non-exposed applications. It cures with ambient humidity to form a highly elastic, seamless, and hydrophobic coating, offering strong adhesion to concrete, cement boards, old acrylic or asphalt coatings, wood, metal surfaces, and galvanized steel. Its low-solvent, non-flammable formulation (non-IMO) ensures safe handling and unrestricted transport. Optimized for durability in protected environments, the membrane maintains flexibility at very low temperatures (down to -40°C), resists moisture ingress, and allows vapor diffusion to prevent humidity build-up beneath the coating. Suitable for basements, bathrooms, substructures, and protected balconies, it delivers long-term waterproofing reliability under demanding site conditions. Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, HYPERDESMO® S-WR BITUMEN supports high-performance waterproofing solutions with consistent quality, mechanical stability, and dependable chemical resistance.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69th km Athens-Lamia National Road, 341 00

TECHNICAL SPECIFICATIONS					
PROPERTY	HYPERDESMO®	HYPERDESMO® 815	HYPERDESMO® CLASSIC	HYPERDESMO® C-LV	Method
Viscosity	3000-6000 cP	3000-6000 cP	3000-6000 cP	2000-3500 cP	ASTM D4287, at 25°C
Density	1.35-1.45 g/cm ³	1.35-1.45 g/cm ³	1.35-1.45 g/cm ³	1.35-1.45 g/cm ³	ASTM D1475/DIN 53217, ISO 2811 at 20°C
Elongation at 23°C	>500 %	>500 %	>500 %	>500 %	ASTM D412/EN-ISO-527-3
Tensile strength at break at 23°C	>8 N/mm ²	>6 N/mm ²	>6 N/mm ²	>6 N/mm ²	ASTM D412/EN-ISO-527-3
Hardness (Shore A)	>70	>60	>60	>60	ASTM D2240/DIN 53505/ISO R868
Water vapour transmission	0.8 g/m ² *h	0.8 g/m ² *h	0.8 g/m ² *h	0.8 g/m ² *h	ASTM E96 (water method)
PROPERTY	HYPERDESMO® LV	HYPERDESMO® HAA	HYPERDESMO® S-WR	HYPERDESMO® S-WR BITUMEN	Method
Viscosity	2000-5000 cP	2000-5000 cP	3500-7000 cP	3500-7000 cP	ASTM D4287, at 25°C
Density	1.35-1.45 g/cm ³	1.35-1.45 g/cm ³	1.50-1.60 g/cm ³	1.50-1.60 g/cm ³	ASTM D1475/DIN 53217, ISO 2811 at 20°C
Elongation at 23°C	>450 %	>400 %	>800 %	>800 %	ASTM D412/EN-ISO-527-3
Tensile strength at break at 23°C	>8 N/mm ²	>6.5 N/mm ²	>2 N/mm ²	>3 N/mm ²	ASTM D412/EN-ISO-527-3
Hardness (Shore A)	>60	>70	>60	>60	ASTM D2240/DIN 53505/ISO R868
Water vapour transmission	0.8 g/m ² *h	0.8 g/m ² *h	0.8 g/m ² *h	0.8 g/m ² *h	ASTM E96 (water method)

Content declaration

It is an EPD of multiple products, based on the average results of the product group.

The average environmental impacts presented in this EPD represent a weighted average based on the production volumes of the individual products included.

Declared unit: 1 kilogram (kg) of an average polyurethane waterproofing liquid membrane.

The composition of the product is expressed in mass (%) per declared unit.

The content declaration below represents a weighted average content declaration based on the production volumes of the individual products included.

Product content	Weight, kg	Range, kg		Post-consumer recycled material, mass-% of product
PU-Prepolymer	3.43E-01	2.50E-01	4.30E-01	0
Fillers	4.61E-01	4.20E-01	5.60E-01	0
Solvent	1.31E-01	5.00E-02	1.50E-01	0
Additives	6.46E-02	4.00E-02	1.60E-01	0

Packaging materials	Mass-kg (per declared unit)	Mass-% (versus the product)
Steel bucket	6.61E-02	< 7%
Cardboard box	3.75E-03	< 0.4%
Polyethylene LDPE film	8.06E-04	< 0.1%
Wood (pallet)	1.75E-02	< 2%

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO₂.

No substances included in the Candidate List of Substances of Very High Concern for authorization under the REACH Regulations that exceed 0.1% of the total weight are present in the final product.

Carbon electricity intensity	
Environmental effects	CO ₂ Emissions (Kg CO ₂ /KWh)*
0.12	

* Residual Greek Mix: **DAPEEP Report 2024** In accordance with section 1.4 of PCR 2019: 14 “Construction Products” version 2.0.1, it is required to disclose the climate impact (measured in kilograms of CO₂ eq. per kilowatt-hour (kWh) using the GWP-GHG indicator) associated with the electricity acquisition during the manufacturing process in A3.

LCA information

Declared unit: 1 kilogram (kg) of an average polyurethane waterproofing liquid membrane.

Time representativeness: The data used for the analysis refer to the year 2024

Geographical scope: Global

Database(s) and LCA software used: Ecoinvent database v.3.11, OpenLCA v.2.5.0 software

Characterization factors (JRC): Based on Reference package EF 3.1

Production of infrastructure and capital goods are excluded from the study.

Description of system boundaries: The system boundaries are cradle to gate (A1-A3) with modules C1-C4 and module D.

A1: Raw Material Supply

Production begins with the supply of materials, which includes the manufacture of essential raw components.

A2: Transportation of raw materials to manufacturer

Transportation stage is relevant to delivery of raw materials from the supplier to the gate of manufacturing plant. Raw materials are transported by trucks or by ships from different suppliers in Europe and Asia. It is assumed that a EURO5, 16-32 tonne lorry is used for road transportation and a container ship for sea transportation.

A3: Manufacturing

The process commences with the weighing of the raw materials. Subsequently, the materials are transferred to the mixing units, where they are stirred to achieve homogenization. The duration of this mixing stage is determined according to the specific characteristics of the product.



Concerning **electricity** mix, the national residual energy mix (2024) as published in DAPEEP SA was used.

C1: De-construction, demolition

Demolition of polyurethane waterproofing membranes takes place with the whole demolition of the building/ construction. Thus, it is assumed that the energy used for the demolition of polyurethane waterproofing membranes has minor significance and the environmental impact of this module is set to be zero.

C2: Transportation of waste

A distance of 100 km by a 16-32 tonne lorry from construction/demolition sites to disposal sites has been chosen as an assumption.

C3: Waste processing for re-use, recovery and/or recycling

This module includes waste processing of the product after its life cycle in order to be recycled and reused in another product system. It is assumed that 100% of the end-of-life waste of polyurethane waterproofing membranes will be landfilled and the environmental impact of this module is set to be zero.

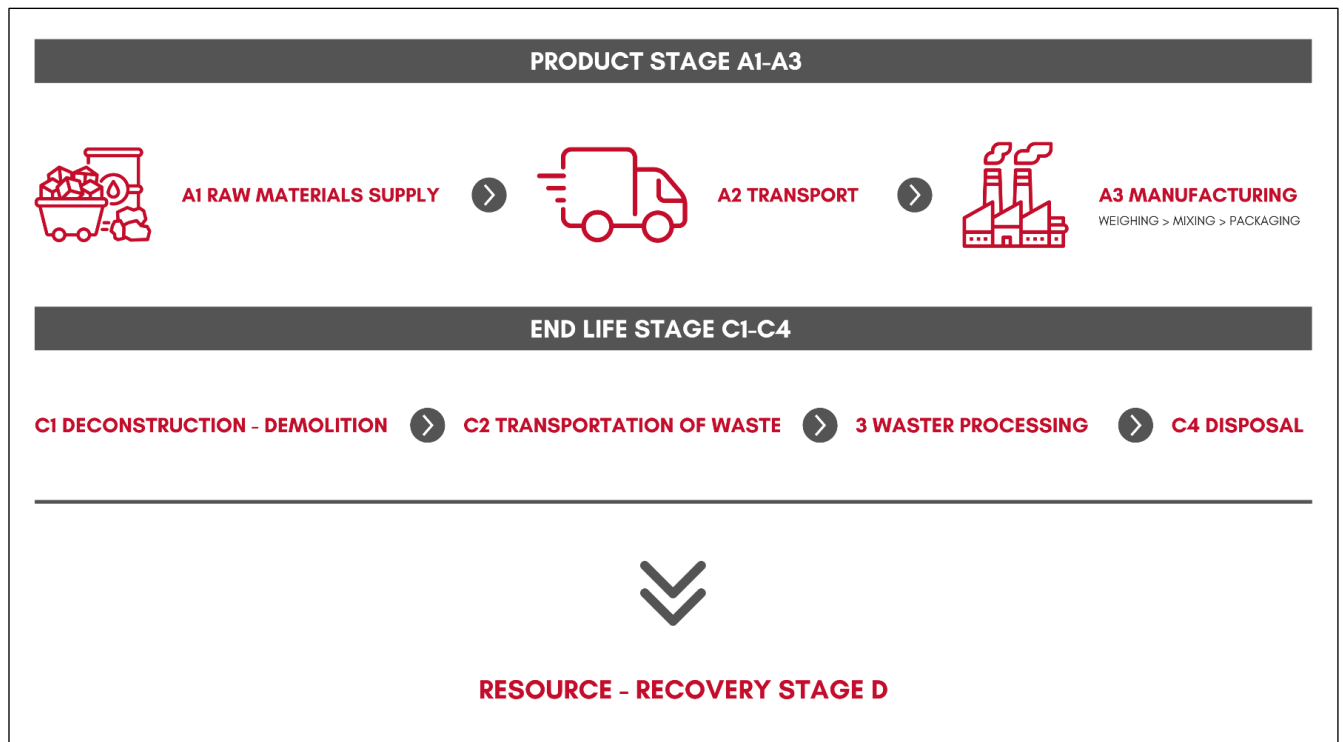
C4: Disposal

This module includes the final disposal of the discarded product. As mentioned above, 100% of the end-of-life waste of polyurethane waterproofing membranes will be landfilled.

D: Resource-Recovery stage

Since the product is only disposed of, there are no benefits deriving from the re-use or recycling of the product after its end-of-life stage.

System diagram:



Additional LCA information

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

Modules declared, geographical scope, share of primary data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Use stage							End of life stage				Resource Recovery stage
	Raw material supply	Transport	Manufacturing	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	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	x	x	x	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x
Geography	GLOBAL		GR	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
Share of primary data	8%			-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	21.5%			-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-

X=included, ND=Module Not Declared

Description of data quality assessment and reference years

All primary data used for Modules A2 and A3 were provided directly by Alchimica and refer to actual operations carried out in the year 2024. These data were collected from the company's internal records.

Generic data were obtained using the OpenLCA v2.5.0 software, with datasets sourced from the Ecoinvent v3.11 database.

Data Quality Information according to EN 15941:2024

Period of Data Collection: 01/01/2024 – 31/12/2024

Geography: Greece, production site located at 69th km Athens-Lamia National Road, 341 00

Market scope: Global market

Technology: Production includes weighing, mixing and packaging operations using electric energy and diesel forklifts. All production steps and equipment are located within the same facility.

Completeness: The datasets cover all relevant processes from raw material acquisition, production, packaging, and energy use.

No significant processes were excluded.

LCI/LCA database: Ecoinvent v3.11 database

Primary data: Company's internal records for all production operations in 2024.

Secondary data: Generic datasets from Ecoinvent v3.11 used for energy, raw materials, packaging, waste and transport.

Share of primary data, of GWP-GHG results for A1-A3

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Production of polyols	Database	Ecoinvent v3.11	2024	Generic data	0.00%
Production of isocyanate	Database	Ecoinvent v3.11	2024	Generic data	0.00%
Production of packaging materials	Database	Ecoinvent v3.11	2024	Generic data	0.00%
Packaging and waste treatment	Database	Ecoinvent v3.11	2024	Generic data	0.00%
Transport of raw materials & packaging	Database	Ecoinvent v3.11	2024	Primary data	7.60%
Generation of electricity used in manufacturing of product	DAPEEP SA	Residual energy mix	2024	Primary data	0.40%
Total share of primary data, of GWP-GHG results for A1-A3					8.00%

The reported share of primary data is associated with uncertainty, as an EPD used as data source lack information on the share of primary data.

Environmental performance

Mandatory impact category indicators according to EN 15804

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	2.37E+00	0.00E+00	1.94E-02	0.00E+00	6.26E-03	0.00E+00
GWP-fossil	kg CO ₂ eq.	2.36E+00	0.00E+00	1.94E-02	0.00E+00	6.25E-03	0.00E+00
GWP-biogenic	kg CO ₂ eq.	3.72E-03	0.00E+00	3.36E-06	0.00E+00	1.69E-06	0.00E+00
GWP-luluc	kg CO ₂ eq.	1.54E-02	0.00E+00	6.33E-06	0.00E+00	3.22E-06	0.00E+00
ODP	kg CFC 11 eq.	9.05E-08	0.00E+00	3.85E-10	0.00E+00	1.81E-10	0.00E+00
AP	mol H ⁺ eq.	1.63E-02	0.00E+00	6.06E-05	0.00E+00	4.43E-05	0.00E+00
EP-freshwater	kg P eq.	8.18E-04	0.00E+00	1.29E-06	0.00E+00	5.17E-07	0.00E+00
EP-marine	kg N eq.	3.01E-03	0.00E+00	2.04E-05	0.00E+00	1.69E-05	0.00E+00
EP-terrestrial	mol N eq.	2.67E-02	0.00E+00	2.22E-04	0.00E+00	1.84E-04	0.00E+00
POCP	kg NMVOC eq.	1.09E-02	0.00E+00	9.49E-05	0.00E+00	6.60E-05	0.00E+00
ADP-minerals&metals*	kg Sb eq.	3.97E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADP-fossil*	MJ	4.73E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
WDP*	m ³	1.33E+00	0.00E+00	1.31E-03	0.00E+00	4.29E-04	0.00E+00
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						

* Disclaimer: 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 experienced with the indicator.

Additional mandatory and voluntary impact category indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2.37E+00	0.00E+00	1.94E-02	0.00E+00	6.26E-03	0.00E+00
Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017							

¹ This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero.

Resource use indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	5.35E+00	0.00E+00	4.61E-01	0.00E+00	1.42E-03	0.00E+00
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	5.35E+00	0.00E+00	4.61E-03	0.00E+00	1.42E-03	0.00E+00
PENRE	MJ	4.74E+01	0.00E+00	2.47E-01	0.00E+00	1.39E-01	0.00E+00
PENRM	MJ	0.00E+00	0.00E+00	2.53E-02	0.00E+00	1.47E-02	0.00E+00
PENRT	MJ	4.74E+01	0.00E+00	2.72E-01	0.00E+00	1.53E-01	0.00E+00
SM	kg	4.21E-01	0.00E+00	3.07E-04	0.00E+00	7.16E-05	0.00E+00
RSF	MJ	1.26E-01	0.00E+00	8.59E-05	0.00E+00	1.47E-05	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	3.21E-02	0.00E+00	3.61E-05	0.00E+00	1.59E-04	0.00E+00
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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water						

Waste indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	1.78E-01	0.00E+00	2.66E-04	0.00E+00	1.14E-04	0.00E+00
NHWD	kg	6.97E+00	0.00E+00	2.95E-03	0.00E+00	1.66E-03	0.00E+00
RDW	kg	6.45E-05	0.00E+00	8.66E-08	0.00E+00	2.38E-08	0.00E+00

Output flow indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	3.96E-01	0.00E+00	2.78E-04	0.00E+00	5.91E-05	0.00E+00
MER	kg	0.00E+00	0.00E+00	3.86E-08	0.00E+00	6.62E-09	0.00E+00
EEE	MJ	6.41E-02	0.00E+00	4.57E-05	0.00E+00	9.19E-06	0.00E+00
EET	MJ	1.23E-01	0.00E+00	6.47E-05	0.00E+00	5.95E-06	0.00E+00

Additional impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
ETP-fw	CTUe	1.05E+02	0.00E+00	7.30E-02	0.00E+00	2.10E-02	0.00E+00
HTP-nc*	CTUh	3.08E-08	0.00E+00	1.75E-10	0.00E+00	2.76E-11	0.00E+00
HTP-c*	CTUh	4.83E-09	0.00E+00	1.35E-10	0.00E+00	2.83E-11	0.00E+00
IRP**	kBq U235 eq.	2.46E-01	0.00E+00	3.49E-04	0.00E+00	9.78E-05	0.00E+00
PM	Disease Incidence	1.15E-07	0.00E+00	1.52E-09	0.00E+00	1.01E-09	0.00E+00
SQP*	Dimensionless	1.51E+01	0.00E+00	1.62E-01	0.00E+00	3.02E-01	0.00E+00

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

** Disclaimer: 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 in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Variations of included products

Mandatory impact category indicators according to EN 15804 - Variations

Indicator	Variations %
GWP-total	46.77%
GWP-fossil	46.49%
GWP-biogenic	116.89%
GWP-luluc	63.46%
GWP-GHG	21.50%
ODP	46.31%
AP	125.08%
EP-freshwater	55.93%
EP-marine	60.18%
EP-terrestrial	56.80%
POCP	41.54%
ADP-minerals&metals*	30.19%

ADP-fossil*	43.75%
WDP*	84.72%

Resource use indicators - Variations

Indicator	Variations %
PERE	65.74%
PERM	00.00%
PERT	65.74%
PENRE	44.02%
PENRM	00.00%
PENRT	44.02%
SM	61.51%
RSF	64.89%
NRSF	00.00%
FW	89.37%

Waste indicators – Variations

Indicator	Variations %
HWD	76.67%
NHWD	206.82%
RWD	61.49%

Output flow indicators – Variations

Indicator	Variations %
CRU	0.00%
MFR	60.47%
MER	0.00%

EEE	64.71%
EET	780.83%

Additional impacts - Variations

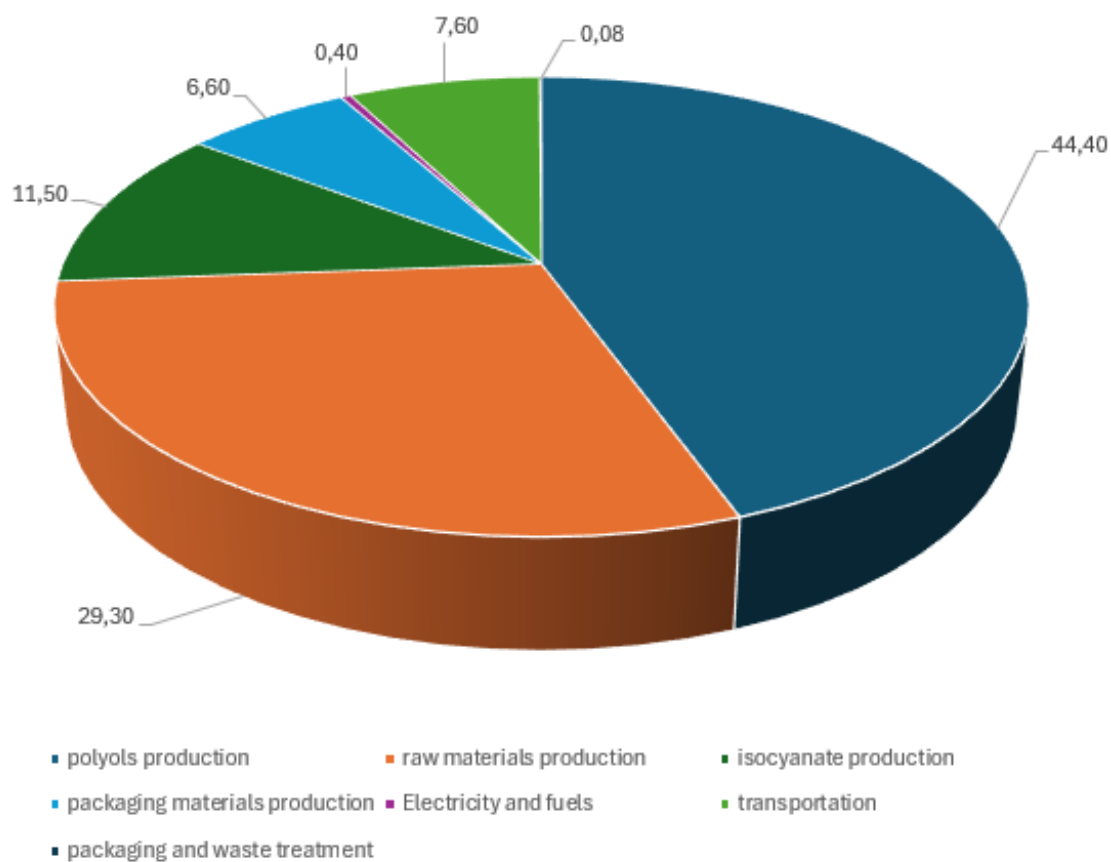
Indicator	Variations %
ETP-fw	66.45%
HTP-nc*	47.93%
HTP-c*	65.46%
IRP**	61.41%
PM	61.68%
SQP*	67.89%

Interpretation

The majority of the total Global Warming Potential (GWP) is attributed to the upstream processes, primarily due to the extraction of raw materials and specifically the production of polyols and is followed by transportation to the production unit. The production of the final product and the manufacturing of packaging, has a relatively minor impact on GWP.

It is evident that raw material acquisition and processing are major drivers of the environmental impact, especially in terms of global warming potential.

Global Warming Potential Contribution



Note:

The use of the results of modules A1-A3 is discouraged without considering the results of module C.

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.

List of abbreviations

GWP-biogenic	Global Warming Potential - biogenic
GWP-fossil	Global Warming Potential - fossil fuels
GWP-luluc	Global Warming Potential - land use and land use change
GWP-total	Global Warming Potential - total
GWP-IOBC/GHG	Global warming potential except emissions and uptake of biogenic carbon
ETP-fw	Potential Comparative Toxic Unit for ecosystems
HTP-nc	Potential Comparative Toxic Unit for humans - non-cancer effects
ADPF	Abiotic depletion potential - fossil resources
ADPE	Abiotic depletion potential - non-fossil resources
AP	Acidification potential, Accumulated Exceedance
ODP	Depletion potential of the stratospheric ozone layer
EP-freshwater	Eutrophication potential - freshwater
EP-marine	Eutrophication potential - marine
EP-terrestrial	Eutrophication potential - terrestrial
POCP	Photochemical Ozone Creation Potential
HTP-c	Potential Comparative Toxic Unit for humans - cancer effects
IRP	Potential Human exposure efficiency relative to U235
PM	Potential incidence of disease due to PM emissions
SQP	Potential Soil quality index
WDP	Water (user) deprivation potential
CRU	Components for re-use
EEE	Exported electrical energy
EET	Exported thermal energy
MER	Materials for energy recovery
MFR	Materials for recycling
PENRT	Total use of non renewable primary energy resources
PERT	Total use of renewable primary energy resources
FW	Use of net fresh water
PENRE	Use of non renewable primary energy resources used as energy carrier
PENRM	Use of non renewable primary energy resources used as raw materials
NRSF	Use of non renewable secondary fuels
PERE	Use of renewable primary energy resources used as energy carrier
PERM	Use of renewable primary energy resources used as raw materials
RSF	Use of renewable secondary fuels
SM	Use of secondary materials
HWD	Hazardous waste disposed
NHWD	Non hazardous waste disposed
RWD	Radioactive waste disposed

EN	European Norm (Standard)
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
CEN	European Committee for Standardization
CLC	Co-location centre
CPC	Central product classification
GHS	Globally harmonized system of classification and labelling of chemicals
GRI	Global Reporting Initiative
SVHC	Substances of Very High Concern
ND	Not Declared

References

- General Programme Instructions of the International EPD® System. Version 5.0.1.
- PCR 2019:14 v.2.0.1 Construction products. EPD System.
- EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works — Environmental Product Declarations - Core rules for the product category of construction products
- ISO 14020:2000 Environmental labels and declarations - General principles
- ISO 14025:2006 Environmental labels and declarations - Type III environmental declarations - Principles and procedures
- ISO 14040:2006 Environmental management - Life cycle assessment - Principles and framework
- ISO 14044:2006 Environmental management — Life cycle assessment — Requirements and guidelines
- Ecoinvent / Ecoinvent Centre, www.Eco-invent.org
- Residual Energy Mix 2023 from Renewable Energy Sources Operator & Guarantees of Origin (DAPEEP SA)

Version history

2025-12-18/ EPD Version 001 Original version of EPD

